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Hospital Utilization by Diagnostic Category, Saskatchewan Hospital Services Plan, 1957

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A STUDY recently published by the Health Information Foundation, entitled "Hospital Use and Charge by Diagnostic Category . . . a report on the Indiana Study of a Blue Cross population in 1956" (1), tempted us to undertake a similar study on hospital utilization in Saskatchewan under the Saskatchewan Hospital Insurance Plan, covering almost the same total population as Indiana Blue Cross. In order to make possible the comparison of hospitalization experience in Saskatchewan with that of Indiana, the statistical approach and diagnostic categories considered in this study have been kept as far as possible similar to the Indiana study.

Factors Affecting Utilization of Hospitals

Since the economic and social background of a geographic unit, and the type of hospital insurance plan, structure of its covered population, benefits provided and its method of payment have a bearing directly or indirectly on the use of hospitals, it is important to mention in brief these environmental factors, before discussing the hospitalization experience.

Economic and Social Background

Saskatchewan, as the centre of the three prairie provinces, is a northern extension of the Continental Plains of North America. Of the total area of 220,182 square miles, only the southern half of the province, comprising about 120,000 square miles is settled and suitable for agricultural purposes. Because of a large area the population is widely scattered, having a density of four persons per square mile. The climate is characterized by extreme and long winters and hot, short summers.

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The settled half consists of a relatively treeless plain in the southwest, a park belt bordering the plain east and north, and a wooded area north of the park belt. Ranching and grain farming predominate in the plains area and mixed farming in the park belt. The wooded area is rich in lumber, fish, fur and trapping. The northern unsettled half of the province consists largely of a portion of what is known as the Precambrian Shield, unsuitable for agricultural settlement but having high po'ential in mineral wealth (2).

Two rivers, the South Saskatchewan River and the North Saskatchewan River run across the province, in a west–east direction, in addition to a number of streams, creeks and lakes. The rainfall is low, providing an average annual precipitation of 11 to 15 inches in the treeless area and 14 to 19 inches in the park and wooded area.

The estimated population of Saskatchewan in 1957 was 879,000, of which approximately 37% was urban and 63% rural. The rural population further constituted 41% farm and 22% non-farm. Covered population by Saskatchewan Hospital Services Plan in that year was 827,698, representing 94.2% of the total population. Details of the Plan's covered population by residence, age-group and sex are discussed in the following sections of the study. As a general trend in population growth, however, it may be stated that ever since World War II, there has been a constant shift of population from rural to urban areas.

The total labour force in Saskatchewan for the year under review was 304,363, representing about 34.6% of the total population, and comprising 248,000 males and 56,000 females, or 54.3% of the male population and 13.3% of the female population.

The distribution by occupation of the total labour force is shown in Table I.

TABLE I—NUMBER OF PERSONS GAINFULLY EMPLOYED BY TYPE OF OCCUPATION, SASKATCHEWAN, 1957*

Occupation	Number of persons	Per cent
Agriculture	150,000	49.3
Manufacturing	12,012	5.3
Mining	4,000	
Construction	27,773	9.1
Transportation, storage and communication	22,901	7.5
Trade	33,804	11.1
Finance, insurance and real estate	4,795	1.6
Professional	15,451	5.1
Service	33,627	11.0
TOTAL	304,363	100.0

*Source: (*a*) Estimated on the basis of D.B.S. figures in *Review of Employment and Payrolls*, 1957, *Taxation Statistics*, Department of National Revenue, 1959, and Department of Labour, Saskatchewan.
(*b*) Includes employees 14 years of age and over.

Depending on the net value of production in 1957, Saskatchewan economy in that year represented a mixed economy. Although other sectors of the economy were becoming increasingly important, agriculture still played a predominant role in the provincial economy. The value of production by industries and their percentage breakdown are presented in Table II.

TABLE II—NET VALUE OF PRODUCTION BY INDUSTRIES, SASKATCHEWAN, 1957

Industry	Net value, $	Per cent
Agriculture	293,000	38.6
Forestry, fisheries and trapping	7,000	1.0
Mining	130,000	17.0
Electric power	24,000	3.1
Manufacturing	110,000	14.4
Construction	196,000	25.8
TOTAL	760,000	100.0

Source: *Saskatchewan Economic Review, 1960.* Economic Advisory and Planning Board, Saskatchewan.

SASKATCHEWAN HOSPITAL SERVICES PLAN

The Saskatchewan Hospital Services Plan was instituted in 1947 to provide a system of tax-supported hospital care insurance for residents of Saskatchewan. The main purpose of the Plan was to remove the economic barriers hindering the needed hospital care by spreading the financial burden of the individual's hospital bill over the entire population of the province. The operations of the Plan are financed from the proceeds of a personal tax supplemented by general funds of the province.

In 1957, as in previous years, the Plan required participation of all persons residing in the province for a period of six months, with the exception of persons provided with hospital care by federal or other provincial governmental programs, residents of the sparsely settled northern area of the province known as the Northern Saskatchewan Administration District, and Treaty Indians. Residents of the Northern Administration District were, however, permitted to participate in the Plan on a voluntary basis. For social welfare cases the Plan provides coverage upon payment of the hospitalization tax on their behalf by the provincial or municipal government agencies responsible for their hospital care.

The Plan does not involve exclusions or waiting periods for pre-existing conditions for its beneficiaries, and there are no age restrictions governing participation.

In regard to the benefits of the Plan, they include payment for public ward accommodation (including meals, special diets and general nursing care), use of operating and case rooms, surgical dressings and casts, X-ray treatments, anaesthetic drugs and equipment, physiotherapy, and most of the drugs in general use.

Subject only to medical necessity for the hospital care involved, no limit is placed on the amount of care which a beneficiary may obtain at the Plan's expense from Saskatchewan hospitals. At the same time, no deterrent is levied on the use of hospital beds.

The Plan's rate of payments to public general hospitals in Saskatchewan during 1957 continued to be determined on a basis adopted at the beginning of 1951. Since January 1, 1951, the Plan has been paying hospitals lump sum amounts on a semi-monthly basis, calculated to represent slightly more than the total of relatively fixed expenses such as depreciation, power plant costs and

salaries, incurred on behalf of SHSP beneficiaries. Payments are also made on receipt of individual accounts from hospitals, at per diem rates estimated to represent slightly less than the amount of such variable expenses as food, laundry and drugs, which fluctuate directly with occupancy. In brief, the fundamental principle involved in the payment system is that hospitals are remunerated at rates which reflect the cost of efficient operation of hospitals in respect of care provided to the Plan's beneficiaries.

Hospitalization Experience 1957

The Saskatchewan Hospital Services Plan's covered population in 1957 was 827,698 of which 426,611 were males and 401,087 females. Distributed according to residence of the beneficiaries, 248,340 resided in cities, 96,279 resided in towns, 91,289 lived in villages, 372,750 in rural municipalities, 17,032 in Local Improvement Districts, and 2,010 in the Northern Administration District. All cities in Saskatchewan were of medium or small size, ranging from Yorkton with a population of 8,193 to Regina with a population of 88,868. Towns had a population of 500 or over and villages 100 and over.

Table III shows the covered population by sex and age groups.

TABLE III—SHSP Covered Population by Age and Sex, 1957

	Both sexes			
Age group	Number	Per cent	Male	Female
All ages	827,698	100.0	426,611	401,087
Under 20	334,297	40.4	171,373	162,924
20–34	159,956	19.3	78,884	81,072
35–49	153,792	18.6	77,928	75,864
50–64	102,159	12.3	54,719	47,440
65+	77,443	9.4	43,687	33,756
Age not stated	51	—	20	31

Hospital Use

In 1957, there were 210.7 hospital admissions per 1,000 persons of the Saskatchewan Hospital Services Plan total covered population (see Table IV). The first six leading causes of hospitalization comprising close to three-fourths of the total hospital admissions were:

Category of disease	SHSP admissions rate per 1,000 beneficiaries
1. Diseases of the respiratory system	43.2
2. Obstetrical care	36.4
3. Diseases of the digestive system	27.8
4. Accidents, poisonings and violence	16.5
5. Diseases of the circulatory system	16.1
6. Diseases of the genito-urinary system	16.0
	156.0

In the case of diseases of the respiratory system, constituting about 20% of the total hospital admissions, diseases of the upper respiratory system rated 19.3

TABLE IV—HOSPITAL UTILIZATION BY DIAGNOSTIC CATEGORY, ADMISSIONS AND DAYS OF STAY, SASKATCHEWAN HOSPITAL SERVICES PLAN, 1957

Major categories and sub-categories of diagnostic conditions	ISC code number	Total of admissions	SHSP admissions per 1,000 beneficiaries	Days of stay in hospital (discharge cases)	Average length of stay per admission
ALL CAUSES		174,355	210.7	1,754,947	10.1
DIAGNOSIS UNRECORDED (Patients treated outside the province)	000.0	800	1.0	6,606	8.3
INFECTIVE AND PARASITIC DISEASES	001.0–138.1	2,781	3.4	30,318	10.9
Tuberculosis (all forms)	001.0–019.2	89	0.1	1,342	15.1
Dysentery	045.2–048.0	16	—	89	5.6
Acute poliomyelitis and its late effects	080.0–081.0	203	0.2	6,728	33.1
MALIGNANT NEOPLASMS (cancer)	140.0–205.0	4,190	5.1	116,388	27.8
Of digestive organs and peritoneum	150.0–159.0	1,220	1.5	38,029	31.2
Of respiratory system	160.0–165.0	312	0.4	8,112	26.0
Of breast	170.0	452	0.5	14,051	31.1
Of genito-urinary organs	171.0–181.0	1,167	1.4	32,127	27.5
BENIGN AND UNSPECIFIED NEOPLASMS	210.0–239.0	3,788	4.6	41,544	11.0
ALLERGIC AND METABOLIC DISEASES	240.0–289.2	5,959	7.2	74,823	12.6
Asthma	241.0	2,053	2.5	21,640	10.5
Diseases of thyroid gland	250.0–254.0	861	1.0	10,905	12.7
Diabetes mellitus	260.0	2,011	2.4	32,379	16.1
DISEASES OF THE BLOOD, ETC.	290.0–299.0	806	1.0	11,394	14.1
MENTAL DISORDERS	300.0–326.4	2,798	3.4	42,056	15.0
DISEASES OF THE NERVOUS SYSTEM	330.0–398.3	7,428	9.0	124,197	16.7
Vascular lesions affecting CNS	330.0–334.0	1,871	2.3	52,826	28.2
DISEASES OF THE CIRCULATORY SYSTEM	400.0–468.3	13,310	16.1	221,256	16.6
Diseases of heart	410.0–443.0	7,980	9.6	150,463	18.9
Arteriosclerotic and degenerative	420.0–422.2	4,610	5.6	90,679	19.7
Hypertension	440.0–447.0	1,725	2.1	25,142	14.6
Hemorrhoids	461.0	969	1.2	10,376	10.7
DISEASES OF THE RESPIRATORY SYSTEM	470.0–527.2	35,793	43.2	216,598	6.1
Diseases of upper respiratory system	470.0–475.0; 510.0–517.0	16,005	19.3	53,538	3.3
Influenza	480.0–483.0	5,812	7.0	33,417	5.7
Pneumonia	490.0–493.0	8,277	10.0	81,668	9.9
Bronchitis	500.0–502.1	4,361	5.3	31,175	7.1
DISEASES OF THE DIGESTIVE SYSTEM	530.0–587.2	23,026	27.8	217,851	9.5
Ulcer of stomach, duodenum and jejunum	540.0–542.0	2,311	2.8	30,347	13.1
Appendicitis	550.0–553.0	4,015	4.9	35,737	8.9
Hernia of abdominal cavity	560.0–561.5	2,688	3.2	32,499	12.1
Diseases of gall bladder	584.0–586.0	3,892	4.7	46,989	12.1
DISEASES OF THE GENITO-URINARY SYSTEM	590.0–637.1	13,229	16.0	141,271	10.7
Nephritis, chronic and unspecified, etc.	592.0–594.0	313	0.4	5,289	16.9
Diseases of male genital organs	610.0–617.0	2,517	3.0	42,342	16.8
Diseases of female genital organs*	620.0–637.1	5,709	6.9	46,714	8.2
OBSTETRICAL CARE	640.0–689.0	30,109	36.4	198,495	6.6
Deliveries	660.0–678.6	21,965	26.5	158,285	7.2
Pre- and post-natal conditions	640.0–652.1; 680.0–689.0	8,144	9.8	40,210	4.9
DISEASES OF SKIN AND CELLULAR TISSUE	690.0–716.0	4,132	5.0	37,359	9.0
DISEASES OF THE BONES, ETC.	720.0–749.0	5,883	7.1	81,622	13.9
Arthritis	720.0–725.0	2,385	2.6	39,841	16.7
CONGENITAL MALFORMATIONS	750.0–759.3	1,007	1.2	19,075	18.9
CERTAIN DISEASES OF EARLY INFANCY	760.0–776.0	779	0.9	7,197	9.2
SYMPTOMS, SENILITY, AND ILL-DEFINED	780.0–795.0	4,109	5.0	25,837	6.3
ACCIDENTS, POISONINGS AND VIOLENCE	E800.0–E999.7	13,662	16.5	136,958	10.0
Fractures and dislocations	E800.0–E839.9	5,757	7.0		
Other injuries	E840.0–E999.7	7,905	10.0		
SUPPLEMENTARY CLASSIFICATIONS FOR SPECIAL ADMISSIONS, LIVE BIRTHS AND STILLBIRTHS	Y00.0–Y21.0	766	0.9	4,102	5.4

*Numbers 620, 621 include diseases of the male breast.

per 1,000 beneficiaries, pneumonia formed 10.0 admissions, influenza 7.0 and bronchitis 5.3.

For obstetrical care, forming the second important major cause of admissions, three-fourths of the admissions in this category were deliveries and the rest pre- and post-natal care.

Among diseases of the digestive system, appendicitis and diseases of the gall bladder constituted about one-third of the total admissions.

It might be noted that while diseases of the respiratory system formed the leading major category of disease for Saskatchewan in terms of hospital admissions, in Indiana Blue Cross, obstetrical care had the highest rate of hospital admissions.

In regard to the length of stay in hospital, out of the total days of stay of 1,754,947, the largest number of days spent in hospitals were for diseases of the circulatory system, amounting to 221,256. The second longest duration of stay was for diseases of the digestive system; closely followed as third by diseases of the respiratory system. In terms of average length of stay per admission, the longest duration of stay was for cancer—27.8 days. Cancer was followed by congenital malformations, diseases of the nervous system and diseases of the circulatory system with 18.9, 16.7 and 16.6, respectively. The lowest average stay per admission was shown by cases categorized under supplementary classifications for special admissions for live births and stillbirths.

Hospital Admissions by Age and Sex

Hospital admissions differed considerably among the age and sex groups of the total SHSP covered population. For both sexes taken together the highest utilization rate was depicted for the age group 65 and over, accounting for 394.1 per 1,000 (see Table V). The second highest rate was shown for the age group 20–34, having 264.9 admissions per 1,000 persons. The third was for the age group 50–64. Women aged 20–34 (the main child-bearing age) experienced the highest rate, 425.4 per 1,000 beneficiaries in the same age group, and this alone

TABLE V—Hospital Utilization (admissions only) by Age and Sex, 1957

Age and sex	SHSP (1957) admissions per 1,000 beneficiaries
All ages	
Both sexes	210.7
Under 20	
Both sexes	151.9
Excluding obstetrics	145.5
20–34	
Both sexes	264.9
Excluding obstetrics	122.6
Male	99.9
Female—total	425.4
Excluding obstetrics	144.7
35–49	
Both sexes	183.1
Excluding obstetrics	149.4
Male	118.8
Female—total	249.3
Excluding obstetrics	180.9
50–64	
Both sexes	220.4
Excluding obstetrics	220.3
Male	192.5
Female—total	252.6
Excluding obstetrics	252.4
65 and over	
Both sexes	394.1
Male	389.3
Female	400.4

constituted more than double the average admission rate of 210.7 per 1,000 for all beneficiaries.

It is interesting to observe that when obstetrical care is excluded from this comparison the age pattern of hospital admissions is quite different. Excluding age group 65 and over, the non-child-bearing ages, the highest admission rate without obstetrical care was 220.3 per 1,000 for the age group 56–64. This was followed by 149.4 per 1,000 for the age group 35–49, and the third 145.5 per 1,000 for the age group under 20. It is phenomenal that when obstetrical care is

TABLE VI—HOSPITAL ADMISSIONS BY DIAGNOSTIC CATEGORY AND BY AGE GROUP, SHSP, 1957

Major categories and sub-categories of diagnostic conditions	ISC code numbers	Rate per 1,000 persons, each age group				
		Under 20	20–34	35–49	50–64	65+
ALL CAUSES		151.9	264.9	183.1	220.4	394.1
DIAGNOSIS UNRECORDED (Patients treated outside the province)	000.0	0.5	1.2	0.9	1.6	2.0
INFECTIVE AND PARASITIC DISEASES	001.0–138.1	5.0	3.0	1.9	1.6	2.6
Tuberculosis (all forms)	001.0–019.2	*	0.1	0.1	0.1	0.4
Dysentery	045.2–048.0	*	*	*	*	*
Acute poliomyelitis and its late effects	080.0–081.0	0.5	0.2	0.1	*	—
MALIGNANT NEOPLASMS (cancer)	140.0–205.0	0.4	0.9	3.7	11.3	28.3
Of digestive organs and peritoneum	150.0–159.0	*	0.1	0.6	3.2	10.2
Of respiratory system	160.0–165.0	*	*	0.2	1.3	1.8
Of breast	170.0	*	0.1	1.0	1.4	1.8
Of genito-urinary organs	171.0–181.0	*	0.3	0.8	2.7	9.2
BENIGN AND UNSPECIFIED NEOPLASMS	210.0–239.0	1.3	5.3	10.3	6.1	4.1
ALLERGIC AND METABOLIC DISEASES	240.0–289.2	4.2	3.7	6.1	13.0	22.2
Asthma	241.0	2.3	0.8	1.9	3.5	6.4
Diseases of thyroid gland	250.0–254.0	0.2	1.1	1.7	2.4	1.6
Diabetes mellitus	260.0	0.5	0.9	1.4	5.2	12.3
DISEASES OF THE BLOOD, ETC.	290.0–299.0	0.6	0.4	0.8	1.4	3.4
MENTAL DISORDERS	300.0–326.4	0.8	4.0	5.7	6.0	5.4
DISEASES OF THE NERVOUS SYSTEM	330.0–398.3	7.0	3.9	5.4	11.0	32.2
Vascular lesions affecting CNS	330.0–334.0	*	0.1	0.5	3.4	18.2
DISEASES OF THE CIRCULATORY SYSTEM	400.0–468.3	2.7	4.3	10.9	31.5	88.0
Diseases of heart	410.0–443.0	0.2	0.9	4.2	19.1	66.9
Arteriosclerotic and degenerative	420.0–422.2	*	0.2	2.3	12.3	38.1
Hypertension	440.0–447.0	*	0.2	0.9	5.2	13.3
Hemorrhoids	461.0	*	1.3	2.5	2.3	1.6
DISEASES OF THE RESPIRATORY SYSTEM	470.0–527.2	64.1	26.3	21.3	28.3	51.7
Diseases of upper respiratory system	470.0–475.0; 510.0–517.0	36.7	11.5	7.0	5.1	4.0
Influenza	480.0–483.0	7.6	6.0	4.2	7.0	12.2
Pneumonia	490.0–493.0	12.0	5.3	5.9	8.9	20.4
Bronchitis	500.0–502.1	7.3	2.0	2.5	4.6	9.7
DISEASES OF THE DIGESTIVE SYSTEM	530.0–587.2	19.3	23.8	29.3	41.1	52.6
Ulcer of stomach, duodenum and jejunum	540.0–542.0	0.2	2.2	4.6	6.9	6.4
Appendicitis	550.0–553.0	7.2	5.7	2.9	1.7	1.3
Hernia of abdominal cavity	560.0–561.5	1.9	2.1	3.1	5.8	8.2
Diseases of gall bladder	584.0–586.0	0.1	3.3	6.9	11.3	14.5
DISEASES OF THE GENITO-URINARY SYSTEM	590.0–637.1	5.7	18.1	21.9	23.3	34.6
Nephritis, chronic and unspecified, etc.	592.0–594.0	0.4	0.3	0.2	0.4	0.8
Diseases of male genital organs	610.0–617.0	1.6	0.7	1.2	4.8	15.5
Diseases of female genital organs†	620.0–637.1	1.1	12.0	14.5	8.6	4.1
OBSTETRICAL CARE	640.0–689.0	6.4	142.2	33.7	0.1	—
Deliveries	660.0–678.6	4.7	105.4	22.9	*	—
Pre- and post-natal conditions	640.0–652.1; 680.0–689.0	1.7	36.8	10.8	0.1	—
DISEASES OF SKIN AND CELLULAR TISSUE	690.0–716.0	4.7	4.6	4.4	5.7	7.2
DISEASES OF THE BONES, ETC.	720.0–749.0	2.4	4.7	9.2	13.4	19.8
Arthritis	720.0–725.0	0.3	0.8	2.4	7.0	14.1
CONGENITAL MALFORMATIONS	750.0–759.3	2.3	0.8	0.4	0.3	0.2
CERTAIN DISEASES OF EARLY INFANCY	760.0–776.0	2.3	—	—	—	—
SYMPTOMS, SENILITY, AND ILL-DEFINED	780.0–795.0	4.3	3.7	3.9	5.9	11.1
ACCIDENTS, POISONINGS AND VIOLENCE	E800.0–E999.7	16.9	13.5	12.7	17.8	26.9
Fractures and dislocations	E800.0–E839.9	6.2	5.2	4.9	8.7	15.8
Other injuries	E840.0–E999.7	10.7	8.3	7.8	9.1	11.1
SUPPLEMENTARY CLASSIFICATIONS FOR SPECIAL ADMISSIONS, LIVE BIRTHS AND STILLBIRTHS	Y00.0–Y21.0	1.0	0.6	0.6	1.0	1.8

*Rate less than 0.05.
†Numbers 620, 621 include diseases of the male breast.

excluded, age group 20–34 showed the lowest hospital admission rate, accounting for 122.6 per 1,000.

In general, it can be said that female admission rates are higher for almost all age groups, with and without the obstetrical care.

Leading Diagnoses for Each Age Group

As each stage of life's circle is peculiarly subject to its own hazards, the admission rate for different age groups shows divergent trends when studied according to age groups. Table VI contains hospital admissions by five age groups. It will be seen from the table that under age 20, diseases of the respiratory system were the leading diagnostic category; under ages 20–34 and 35–49 obstetrical care formed the leading cause of hospital admissions; under age 50–64, diseases of the digestive system topped the list; and under age group 65 and over, diseases of the circulatory system headed the annual hospital admissions rate in 1957.

Under age group 20, respiratory diseases had an admission rate of 64.1 per 1,000 persons, accounting for 42.2% of all admissions in this age group. For age group 20–34, obstetrical care with 142.2 admissions per 1,000, formed 53.7% of all the admissions in this age group. The share of obstetrical care, though still outstanding in the age group 35–49 constituted only 18.4% of the total admissions for the same age group. Under ages 50–64, diseases of the digestive system with a rate of 41.1 per 1,000, was 18.4% of all admissions. For ages 65 and over diseases of the circulatory system comprised 22.3% of total admissions in this age group with 88.0 admissions per 1,000 persons.

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Prevention of Chronic Disease[1]

LESTER BRESLOW,[2] M.D., M.P.H.

AS public health workers approach the problem of chronic disease they tend naturally to emphasize prevention. This seems wise because the ultimate attack on any disease problem is preventive. The history of disease control in general is the history of preventive medicine. Whether disease has been infectious, nutritional, occupational, or of other origin the final control has always been based upon the principles of prevention.

Turning to the major disease problems of our day, chronic illness, the same principle of prevention is proving its worth. Because we have so recently conquered some of the major acute diseases of previous decades and because the chronic diseases so suddenly have engulfed our thinking about health, it still may appear that prevention of the chronic diseases is far off. Actually substantial progress is being made and is accelerating.

First of all, it is necessary to establish a clear concept of what chronic disease prevention means. It takes two forms. One is primary prevention, i.e., the absolute avoidance of occurrence of disease, e.g., by vaccination against poliomyelitis, or control of dust to prevent silicosis. These two diseases which until recently caused many deaths and a substantial amount of chronic disability, can be completely controlled through application of available knowledge.

The other form of prevention of chronic disease is secondary prevention, i.e., early detection and prompt adequate treatment after the disease has occurred, to prevent disability or premature death. Examples are early detection of diabetes, and early detection of cancer of the uterine cervix. Still relatively common as causes of death and disability, these two diseases are now gradually coming under control with technical advances in detection, diagnosis and treatment.

Primary Prevention

Such massive problems as the cardiovascular diseases and cancer which now confront preventive medicine tend to obscure the progress which has been made toward the control of chronic disease through primary prevention. A major key is the understanding that chronic disease, like all disease, arises mainly out of conditions of life.

The history of cancer of the scrotum illustrates this point. In the early days of the industrial revolution many young men became ill and died with cancer of the scrotum. An observant physician, Sir Percival Potts, noted that the disease occurred principally among those employed as chimney sweeps whose bodies were covered with soot day after day. Changing the conditions of work, simply

[1]Presented at the annual meeting of the Canadian Public Health Association, Regina, Saskatchewan, June 6–8, 1961.

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introducing greater cleanliness, eliminated the disease. In more recent times investigators have found that exposure to certain chromate ores and to radioactive ore causes cancer of the lung, and exposure to certain dyes causes bladder cancer. Again, avoidance of exposure prevents the occurrence of the disease.

Evidence is now rapidly accumulating that many forms of cancer are due to environmental agents that penetrate the body. Cigarette smoking has been identified and accepted by health authorities of many countries as a major factor in the occurrence of lung cancer. This is the most striking disease phenomenon of our day. In the United States mortality from this cause among men doubled between 1930 and 1940, doubled again from 1940 to 1950, and has about doubled again during the past decade. Lung cancer now causes hundreds of deaths each week in the United States. If this great increase had occurred during three weeks instead of three decades, imagine the excitement. Yet because the increase has taken place over the span of a generation, because the cause involves a habit followed by the majority of men and increasing numbers of women, because tremendous economic forces encourage the spread of the habit, we have made little headway in the control of a disease for which means of primary prevention are now at hand. Here is a job for everyone in public health, from chemists to behavioral scientists.

Another phenomenon in the cancer picture which has attracted far less attention, but which is equally intriguing to the epidemiologists, is the decline in stomach cancer mortality in several countries. In my own state, California, the age standardized mortality rate from stomach cancer declined from 27 per 100,000 population in 1930 to 11 per 100,000 in 1956. Treatment has played little part in this change. By far the most common form of fatal cancer among men in 1930, stomach cancer will be a rare cause of death in 1980 among residents of the United States if present trends continue. Why this virtual disappearance? It is hard to conceive of this being due to something other than a change in some condition of life.

From these illustrations it is clear that we are on the verge of tremendous advances in the primary prevention of cancer. What is needed is more research —epidemiological research, as well as clinical and laboratory research—to determine more precisely the causative factors, and research in behavioral science that will yield knowledge concerning how to change human habits when necessary.

Chronic disease of the lung, apart from tuberculosis and cancer, is another category of disease which deserves careful attention by those in preventive medicine and public health. Data from California indicate a several hundred percent increase in deaths attributed to emphysema, chronic bronchitis, and other types of chronic pulmonary disease during the past decade. Cigarette smoking, again, appears to be an important factor. However, occupational and other factors may be involved.

In this connection, the history of berylliosis may be of interest. When beryllium was first introduced into the manufacture of artificial light fixtures, experiments on guinea pigs gave no evidence of harmful effect from the substance being used. Later, several persons employed in the industry and some exposed while merely walking outside near the manufacturing plant became ill or died with chronic pulmonary disease. Only then did it become clear that the

substance which failed to harm guinea pigs could kill human beings. This experience in preventive medicine indicates the fallacy of relying upon negative animal experimentation as a safeguard against human disease from similar exposure. Beryllium and cigarette smoke may be quite safe for certain animals; in humans such substances can cause chronic fatal disease.

Man is changing his environment at an ever-quickening pace. As he does so, the likelihood of chronic disabling and fatal disease resulting from new conditions increases and must be guarded against. The fact that conditions of life seem to "improve" does not assure the avoidance of chronic disease.

The most common cause of death among men today in North America, coronary heart disease, results from some change during recent decades in the conditions of life on this continent—conditions of which we are generally proud. Although the "more abundant life" is something we have sought and still seek, somehow it results in the death of almost one-third of men from coronary heart disease. The disease is definitely increasing, particularly among middle-aged men. Already the leading cause of death among men of all economic classes in North America, the disease is now emerging as a common fatal illness among men of the higher income groups in South America and other areas of the world which are advancing toward the "more abundant life". Here is a major task for the epidemiologist and his colleagues in other phases of medical research.

Even medical advances can take their toll. Beginning in the 1930's, a major effort was undertaken to save the lives of premature infants. Since oxygen was one form of treatment, physicians and engineers designed incubators to increase the oxygen breathed up to very high levels. During the 1940's, a blinding disease of infants, retrolental fibroplasia, began to occur with increasing frequency. Several years passed and thousands of babies were blinded before it was realized that excessive oxygen—far above the amount necessary to save babies' lives—was responsible. In one state alone, we counted 685 blind babies before the necessary epidemiological knowledge was acquired and applied.

These few examples merely illustrate the potential of knowledge already in hand for the primary prevention of chronic disease, and the challenge to epidemiology to increase this knowledge. It is the ultimate hope for control of chronic disease.

Secondary Prevention

In the meantime as our capacity for primary prevention of chronic disease grows, much can be accomplished through secondary prevention. A vast amount of disability and premature death could be avoided by utilizing available techniques for early detection, diagnosis and treatment of chronic disease.

Cancer of the uterine cervix was responsible for about 700 deaths each year in California during the 1950's. Although the death rate was declining, about the same actual number of deaths occurred each year because of increasing numbers of women in the age-group where the disease strikes most frequently. Data from the California Tumor Registry reveal that in the so-called localized type of the disease, before it has spread to adjacent or distant organs of the body, the five-year survival (roughly, cure) rate during 1952–1956 was 81%. When the cancer had spread to distant organs, however, the metastatic stage, five-year survival was only 12%. Indications are that treatment in the very

early stage of the disease, so-called *in-situ* cancer of the cervix, is nearly 100% effective. The disease can be detected in this very early stage by the simple and accurate cytologic test for cancer (Papanicolaou Smear). Thus here is a disease which causes about 700 deaths each year in my state, most of these deaths being preventable by techniques now very well known.

Glaucoma, hardening of the eyeball due to unknown causes, has resulted in blindness for about 4,000 persons in California and severely impaired the vision of many more. It is the diagnosis in about one-seventh of all cases of blindness in our state. Again a simple procedure, tonometry, which indicates the tension of the eyeball will reveal this chronic condition before irreversible damage has occurred, and sight may be then preserved by means of treatment.

About 1% of persons in California beyond the age of 25 years know that they have diabetes; another 1% have the disease without knowing it. Diabetes not only causes a substantial number of deaths each year but also leads to numerous complications that result in a great deal of disability. The earlier the disease is detected and treatment started, the better is the outlook. A screening test which requires only a single drop of blood from the finger-tip will indicate the presence of diabetes.

One could cite more examples of significant chronic conditions which can be found by simple tests during the asymptomatic stages of disease when treatment is most effective. Yet, except in the case of tuberculosis and syphilis, public health agencies have not made appropriate use of these screening techniques. They have been used only to a limited extent even though it is clear that widespread application would result in prevention of many premature deaths and much disability.

A brief listing of available tests and the conditions they reveal may indicate the potential of this form of preventive medicine.

Available Screening Tests

Chest X-ray	Tuberculosis Certain heart diseases Lung cancer
Blood tests	
Blood sugar	Diabetes
Hemoglobin	Anemia
Serologic test	Syphilis
Height and Weight	Obesity and underweight
Blood pressure	Hypertension
Vision test	Visual defects
Hearing test	Hearing defects
Urine tests	
Albumin	Cardiovascular and renal disease
Sugar	Diabetes
Electrocardiogram	Heart disease
Tonometry	Glaucoma
Cytologic test for cancer	Cancer of uterine cervix; also other sites

One method of successfully using these techniques for chronic disease detection is termed multiphasic screening. This is the combination of several tests into a single battery, applied rapidly and economically to large groups of apparently well persons. By this means individuals are identified as having possible disease.

They are referred then to their own physicians for diagnosis and whatever further medical care may be indicated.

Perhaps the ideal method of secondary prevention of chronic disease is the so-called periodic health examination in which the physician takes a careful history, makes a complete physical examination and obtains certain laboratory and X-ray findings. However, several obvious practical difficulties sharply limit the extent to which this procedure may be undertaken: the present supply and orientation of physicians, cost, and unsatisfactory public response to appeals to obtain such periodic health examinations.

In this situation multiphasic screening presents a realistic alternative. It will detect a substantial amount of chronic disease in stages when treatment is most effective. The actual tests, performed by technicians under medical direction, are not very costly. (Our most recent multiphasic screening in California included a brief health questionnaire, height and weight determination, vision test, tonometry, urine sugar and albumin determination, serologic test for syphilis, chest X-ray, blood pressure, electrocardiogram and pulmonary function test—all for less than $10 total cost per person screened.) Multiphasic screening is popular, at least with the California public. There has been good participation whenever it has been offered.

In addition to revealing hitherto unsuspected chronic disease, another result of screening is that it brings back to medical care individuals who have lapsed from treatment. The absence of severe symptoms in many chronic diseases leads patients oftentimes to neglect needed, continuous care. Screening programs induce many patients with diabetes, glaucoma and important chronic conditions to renew medical treatment.

A multiphasic screening program also provides an excellent opportunity for health education. At the time a community or a group is preparing for multiphasic screening, information about the diseases that may be discovered and about health practices can be disseminated. There is reason to believe that taking part in such a health service creates a receptive situation for individuals to learn about the health significance of obesity, the nature of diabetes, proper care of the eyes during middle life, the significance of high blood pressure and many other aspects of health which the general public should understand.

Not only the public but also the medical profession may learn more about chronic illness from participation in multiphasic screening. It assists them in dealing with patients' understanding of health and disease. Medicine is becoming more concerned with early forms of chronic disease, e.g. carcinoma-in-situ, borderline diabetes and asymptomatic glaucoma. Screening programs direct attention to such conditions and provide an opportunity for deepening medical insight into them and for treating patients according to the best of available knowledge.

Major advances toward the avoidance of chronic disease await only the application of present means for primary prevention and the pursuit of further knowledge to accomplish this, mainly through epidemiology. In the meantime a substantial measure of control can be achieved through secondary prevention, i.e. early detection and prompt treatment, of chronic illness by means of multiphasic screening.

Health Aspects of Emergency Planning in Canada[1]

E. J. YOUNG,[2] C.D., M.D., D.P.H.

IN this nuclear age Canada must be prepared for the possibility of nuclear war. Amongst the many difficult problems involved in making such preparations those in the fields of public health and medical care occupy a prominent position. These problems which challenge the health professions are difficult and comprehensive. In my opinion there are two overall problems, namely, a *medical care problem*, the management of mass casualties, and a *public health problem*, the maintenance of health and the prevention of disease in the surviving population. In studying these problems the health professions must consider the possibility of thousands of casualties occurring instantaneously as a result of the effect of blast, heat, and radiation from a nuclear explosion and they must think of protecting the population from the effect of radiation from fallout, from biological and chemical agents, and from an environment which has suddenly become primitive. If the members of the health professions are to be prepared to even begin to cope with these problems planning must be done before the event for the mobilization, deployment and employment of the health resources of the nation.

Development of Civilian Emergency Planning

Civil Defence began in Canada in 1949 as a responsibility of the Department of National Defence when a federal civil defence co-ordinator, Major General F. F. Worthington, was appointed to develop Civil Defence.

In 1951 responsibility for Civil Defence was transferred from the Department of National Defence (D.N.D.) to the Department of National Health and Welfare (D.N.H. & W.). Within the latter department a Civil Defence Headquarters was set up which was advised on health matters by the Health Branch of the Department. This headquarters continued until the re-organization of Civil Defence, September 1st, 1959, when it was disbanded.

During this period from 1951 to 1959 civil defence planning and organizing was carried out in the Department of National Health and Welfare in the federal government and by the provinces and some municipalities across the country. Federal/Provincial Ministers' Conferences were held periodically and there were annual co-ordinators' conferences at the federal Civil Defence College at Arnprior which were attended by provincial and municipal civil defence co-ordinators and their staffs.

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[1]Presented at the Fourth Annual Refresher Course in Public Health, School of Hygiene, University of Toronto, February 6–8, 1961.

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Emergency Measures Organization

This organization was established in June 1957 as a section of the Privy Council Office for the purpose of planning for the continuity of government in time of national emergency, for the control of communications across Canada and of road and rail transport and to be responsible for the civil emergency planning inside the structure of the North Atlantic Treaty Organization (NATO).

Re-Organization of Civil Defence

Toward the end of 1958 the Canadian Government initiated a survey of the civil defence situation across the country. The report on this survey was considered in the context of the total military and civilian arrangements necessary to prepare the nation for the possibility of nuclear war. The Government decided, after considering all the relevant factors, to undertake a major re-arrangement of federal civil defence functions and to offer to assume directly certain responsibilities previously carried by the provinces and municipalities.

This civil defence re-organization became effective on September 1st, 1959. It is based on the two main principles that civil defence should be considered a function or activity of government rather than an organization as such; and that the civil defence functions should be divided into clearly defined tasks and assigned to levels of government and at each level to those departments and agencies best able to undertake and discharge them.

Development of Emergency Health Services

Following the transfer in 1951 of the responsibility for civil defence from the Department of National Defence (D.N.D.) to the Department of National Health and Welfare (D.N.H. & W.) a civil defence health planning group was formed within the Health Branch of the D.N.H. & W. This group studied the health problems associated with the major threat of that time, namely the relatively small so-called nominal atomic bomb. In these studies the working party technique was used extensively, problems being referred to working parties, the members of which were authorities on the subject being studied. Information obtained by this and other means was disseminated to members of the health professions by means of manuals, pamphlets, by courses at the Civil Defence College and by conferences and institutes which were held across Canada. The advent of the large thermonuclear weapon in 1954 made necessary a revision of the original material and of the Civil Defence Health Services program. The re-organization of civil defence and the disappearance of the federal Civil Defence Headquarters necessitated further change in emergency health planning, the Civil Defence Health Services becoming Emergency Health Services, a division within the Health Directorate of the Health Branch of the Department of National Health and Welfare.

During this period provincial and municipal activity in Emergency Health Planning had taken place in an uneven manner across Canada.

Allocation Amongst Federal Government Departments of Responsibility for Civil Emergency Planning

The re-organization in 1959 resulted in the disbandment of the federal Civil Defence Headquarters. The Emergency Measures Organization became respon-

sible for any civil defence activities which were not assigned to a specific federal department. The new allocation of responsibilities is as follows:

The Emergency Measures Organization is the co-ordinating agency for all civil emergency planning and for all federal/provincial planning. It is responsible for planning for continuity of government and for tasks hitherto grouped under "civil defence" and not now assigned to some department of government and for general liaison with the provinces, NATO, and foreign countries relating to civil emergency planning.

The Department of National Defence, particularly the Army, has been given a primary role in survival operations and has been delegated responsibility for a substantial number of functions that are technical in character such as the complete public warning system, radiation monitoring and fallout protection, emergency governmental communications, re-entry into damaged areas and support for local authorities in the maintenance of law and order.

The Department of National Health and Welfare, which formerly had the major responsibility for civil defence, will concentrate its attention mainly on advising provincial authorities with respect to the *provision of emergency health and welfare services.*

The R.C.M.P. has the responsibility of providing advice and assistance to provinces concerning the preservation of law and order and the control of road traffic under emergency conditions.

Other federal departments and agencies have duties that relate chiefly to carrying on essential functions or to maintaining the country's economic life under conditions of nuclear attack.

FEDERAL EMERGENCY PLANNING ORGANIZATION AND RELATED SUBJECTS INCLUDE:

A Cabinet Committee on Emergency Plans to give policy guidance in all areas of civilian emergency planning for war.

The Emergency Measures Organization with headquarters and staff in Ottawa and a regional office in each province.

Departmental Planning Staffs. This includes the federal Emergency Health Services staff and other federal health officials with wartime responsibilities.

Emergency Measures Organization officers have been appointed in ten provinces. Their functions include representing EMO in the provinces, co-ordinating Emergency Planning of federal departments and agencies in the provinces, including National Health and maintaining liaison with provincial governments, civil defence staffs and appropriate military headquarters.

Financial Aid Program (F.A.P.). The federal government is prepared to pay up to 75% of approved provincial and municipal emergency projects. Formerly its share was 50%.

A War Supplies Agency within the Department of Defence Production is being developed for the control and distribution of essential supplies in wartime.

Facilities for Emergency Government. These have already been provided for the continuation of the essential wartime functions of the federal government. Similar facilities are planned across Canada as emergency headquarters for the essential personnel of the federal government in the provinces, of provincial governments and for military staff. Health departments are represented in the

central and regional emergency headquarters. Similar emergency headquarters are also planned for some municipal governments.

Provincial and Municipal Responsibilities

During two federal/provincial Ministers' conferences in the spring and fall of 1959 the responsibilities of the provinces were discussed and it was decided that as certain emergency functions of government are simply a projection of normal peacetime provincial responsibilities, and that in these fields the provinces and municipalities have more experience and knowledge than has the federal government or its agencies, that these functions should be the responsibility of provincial and municipal governments.

Amongst the wartime responsibilities considered to belong to the provincial authorities, with such federal assistance as may prove necessary, and which are of particular interest to us are:

The organization and control of medical services, hospitals and public health measures.

Organization of municipal and other services for the maintenance of water and sewage systems.

Training of civilians.

Reception services, including arrangements for providing accommodation, emergency feeding and other supplies and welfare services for people who have lost or left their homes or who require assistance because of the breakdown of normal facilities.

Responsibility for Emergency Health Services

Federal

The responsibility of the Department of National Health and Welfare has already been mentioned. It is contained in a civil defence order-in-council promulgated in May 1959 which sets out in broad terms the responsibilities of federal departments and agencies with regard to survival planning and this indicates that amongst the civil defence powers, duties and functions which the Minister of National Health and Welfare shall have and exercise is "Assistance to provincial and municipal governments and to others in connection with the organization, preparation and operation of medical, nursing, hospital and public health services."

It will be noted that the assistance will be given to both provincial and municipal governments. Except in unusual circumstances the aid will be rendered to municipal governments through provincial governments.

Provincial

As stated earlier, amongst the responsibilities given to the provinces was the "organization and control of medical services, hospitals (including emergency hospitals) and public health measures."

Municipal

Municipalities are delegated responsibility by provinces for the organization and control of local health services within the framework of the provincial plan and with technical and financial assistance from the provincial and federal governments.

Constitutional Basis for the Assignment of Health Tasks

It should be noted that the relationship between the civil defence tasks given to the Federal Emergency Health Services and those assigned to the provincial emergency health services is in accordance with the constitutional pattern that health falls within the purview of provincial governments. This also fits in with the organizational structure of our professional and voluntary health agencies as these associations have a national body with provincial branches or divisions.

Relationship between D.N.H. & W. and D.N.D. Health Responsibilities

Following the promulgation of the civil defence order-in-council and after discussion between officials of the two departments, the role of the Canadian Forces Medical Service in survival operations and its relationship to that of Emergency Health Services was decided. It was agreed that as the Armed Services are responsible for the re-entry operation into disaster areas which are under military control, that the Canadian Forces Medical Service will be in command of health arrangements in these areas and will be prepared to evacuate and treat civilian casualties. It was further agreed that close liaison was necessary between civilian emergency health authorities and the Canadian Forces Medical Service in order to avoid duplication of effort and to ensure the uninterrupted movement of casualties from military to civilian medical facilities. This liaison is required at federal, provincial and municipal levels.

Emergency Health Services

Federal

As noted earlier the health task assigned to the D.N.H. & W. by civil defence Order-in-Council is "Assistance to provincial and municipal governments and to others in connection with the organization, preparation and operation of medical, nursing, hospital and public health service." This is primarily concerned with the continued development of the work of the former Civil Defence Health Services. In addition, included in the new terms of reference given the federal E.H.S. were two responsibilities which the C.D.H.S. had unofficially begun to develop before the re-organization of civil defence, namely, emergency health planning for the period after the civil defence phase of the emergency, the rehabilitation period, and planning for the continuity of the essential health functions of civilian government during the emergency period. Federal emergency health services also were given other miscellaneous tasks such as planning for federal health assistance in national and international disasters if this was requested and authorized.

The Civil Defence portion of the work of E.H.S. is considered under the following headings, namely:

(1) Medical Services which include (a) First aid and home nursing arrangements, (b) Primary treatment services, (c) Hospitals (existing and improvised), (d) Emergency blood services.
(2) Public health.
(3) Health aspects of special weapons.
(4) Health supplies.
(5) Training of health personnel.

Primary Treatment Services

The main change brought about by the assumption by the C.F.M.S. of their role in Survival Operations was in primary treatment services. These services as developed by C.D.H.S. include two units. An Advanced Treatment Center, the function of which is the sorting and primary treatment of casualties and which is the place nearest the disaster at which civilian professional medical and paramedical personnel are located and the Casualty Collecting Unit which is a first aid unit and forward tentacle of the A.T.C. where trained first aid personnel were to take over the casualties as they were rescued and evacuate them to the A.T.C. With the military taking over the re-entry operation there would appear to be a continuing role for the A.T.C. to supplement the work of the field ambulance companies. The continued requirement for C.C.U.s is more doubtful as the military concept is that the personnel employed on rescue duties render first aid and evacuate the casualties to the field ambulance companies which are the first locations where military professional medical personnel are available. This whole subject of the amount and types of civilian personnel required to help the C.F.M.S. in the disaster area and the mechanism of command and control of civilian health personnel in the area under military control, and of the smooth turnover of the casualties from military to civilian health authorities is one of the areas under study by the C.F.M.S. and the civilian E.H.S. The function of the federal health services is to assist the provincial and municipal health service in their development of primary treatment services by providing technical assistance and training equipment.

First Aid and Home Nursing

In the past, federal E.H.S. has given financial and technical assistance to provincial and municipal C.D.H.S. in providing first aid and home nursing training to as many civilians as possible and has worked closely with such organizations as the St. John Ambulance Association and the Canadian Red Cross Society. This work continues and the number of citizens trained is increasing.

Hospitals

In the hospital field the federal C.D.H.S. has been most successful in encouraging existing hospitals to have disaster and evacuation plans. Hospital disaster institutes have been held across Canada and many hospitals have developed and tested disaster plans. The federal E.H.S. continues this important work by providing manuals, and through governmental provincial health organizations, hospital disaster supplies to hospitals that have disaster plans. It is understood that the first course for hospital administrators is being given jointly by the federal E.H.S. and the Canadian Hospital Association at the Civil Defence College in Arnprior this spring.

Improvised Hospitals

It is apparent, however, that should a nuclear attack occur a large percentage of hospital beds in existing hospitals would be destroyed and plans are required to make provision to replace the beds destroyed and provide additional accommodation for casualties. One answer to this is the transportable 200-bed improvised hospital. This is a complete surgical hospital which can be moved by three or four trucks and set up in a building such as a modern school. Some time ago

the supplies and equipment for sixteen training hospitals were ordered and should soon be available for training across Canada. More recently, authority was obtained for the first phase of a large program to obtain a large number of these hospitals to be stored across the country for operational use.

Emergency Blood Services

The Federal E.H.S. in association with the Canadian Red Cross Society is developing a plan for an Emergency Blood Service and obtaining the equipment for this service.

Public Health

The Federal E.H.S. have a responsibility to assist the provinces and municipalities in the development of their emergency public health services. The former C.D.H.S. had working parties develop doctrine on emergency water and sanitary services. This material has or is being revised by the public health section in association with the special weapons section. Planning is required for public health needs in reception areas. It is anticipated that large numbers of evacuees and/or refugees will leave urban areas and crowd into reception centers located in semi-rural locations and if the health of survivors is to be protected, planning before the event is required by the health authorities of these communities. The special weapons and public health sections of the federal E.H.S. also plan with the assistance of panels of the Defence Research Board, such as the panel on Infection and Immunity and other advisory groups for the protection of the population against biological warfare.

Health Aspects of Special Weapons

In Civil Defence Health Services there was a Special Weapons Section and this section is being continued within Emergency Health Services. This section is concerned with the health aspects of nuclear, biological and chemical warfare and maintains a close association with the appropriate D.R.B. panels and directorates of D.N.D. and other government departments with the objective of having common standards and providing maximum protection to both civilian and military personnel. It collects and disseminates information to provinces and others in its special fields.

Health Supplies Stockpile

Health supplies to the value of many millions of dollars have been obtained by the federal E.H.S. and stockpiled in D.N.D. depots across Canada. The amount of money authorized for this stockpile has been more than doubled since the original nine million dollars was authorized several years ago. There are both operational and training supplies. The aim is to provide supplies now to provinces, municipalities and hospitals for training purposes and to have operational health supplies located across Canada for the use of provincial and local emergency health services should they ever be required.

Training

Courses are arranged at the federal Civil Defence College in Arnprior by federal E.H.S. for physicians, surgeons, dentists, veterinarians, hospital administrators, nurses, pharmacists and instructors in casualty simulation.

National Conference on Emergency Health Services

In November 1959, following the re-organization of Civil Defence, the federal E.H.S. arranged a national conference on Emergency Health Services. This conference was attended by representatives from all the provinces, of national professional health organizations and agencies, of the Armed Forces medical and dental services, of other federal government departments with health interests and by the members of the Defence Medical and Dental Services Advisory Board.

At this conference delegates were briefed regarding the re-organization of Civil Defence. The health aspects and implications were discussed along with suggestions by the federal E.H.S. regarding provincial and municipal organization and staffing patterns and training courses for health personnel.

Delegates agreed in principle that full time E.H.S. staff were required in most provinces and large municipalities. They also agreed that there should be advisory committees to support the permanent staffs and close liaison of provincial and local emergency health services with provincial officers of EMO with the appropriate civil defence organization and C.F.M.S. staff.

Most delegates agreed that provincial E.H.S. should preferably be an organization within the provincial departments of health. Full use should be made of existing services within health departments.

PROVINCIAL AND MUNICIPAL EMERGENCY SERVICES

As indicated earlier, it is the provinces and municipalities which have been asked to organize, prepare and operate medical, nursing, hospital and public health services. Unless these governments take this action the work of the Department of National Health and Welfare and of C.F.M.S. in health aspects of emergency planning will be of little avail. The personnel resources of the C.F.M.S. preclude it from doing more than exercising command and control in military areas, giving first treatment, and evacuating casualties to civilian emergency health service installations, and even to carry out this task they will require civilian assistance. There must be organized provincial and local civilian emergency health authorities to whom the C.F.M.S. can hand over its casualties and with whom it can plan in peace and work in war. Regardless of the policy on evacuation and shelter it is anticipated that rural communities away from target areas will be flooded with evacuees or refugees and unless provincial and local health authorities have made plans for the reception of these homeless people it is probable that the survival of the population who are not casualties will be jeopardized.

Unless it has changed drastically in the last few months the development of provincial and municipal emergency health services is most uneven. At least one province has an overall emergency health services plan and the medical officers of health who are provincial civil servants have been assigned emergency health services responsibilities. Other provinces have full or part time E.H.S. staffs. In some provinces senior health officials have participated in emergency measures organization planning. But in others there has been practically no development of Emergency Health Services. The same picture is generally true of Emergency Health Planning in municipal governments.

EMERGENCY HEALTH SERVICES ARE A PART OF COMMUNITY HEALTH PROGRAMS

In my opinion Emergency Health Services should be part of community health services. It is interesting that the "Guide to a Community Health Study" of the American Public Health Association includes civil defence organization planning and makes recommendations concerning the appointment of the chief medical officer for civil defence.

Earlier in this paper it was stated that Civil Defence is a function of government. It would therefore seem logical that community health planning should include a consideration of plans to preserve the health of members of the community in time of national emergency and for the management of mass casualties.

The Role of Public Health Physicians and Members of Other Public Health Disciplines in Emergency Planning

In my opinion public health physicians and members of other public health disciplines have a public duty to participate in Emergency Planning. Amongst those in the D.N.H. & W. and in provincial departments of health are some, in addition to the staff of E.H.S. who have continuing health duties during an emergency. They would be at one of the emergency headquarters which are being developed across the country. They are required to plan and train before the event for their work during an emergency.

The local medical officer of health has a public duty to participate in emergency planning and the development of local emergency health services. If emergency health planning is a function of government in most cases he is the responsible government health official. It is essential that he be supported by an emergency health planning committee on which are representatives of the various health disciplines and professional societies. Medical care planning in most cases would probably be delegated to the local medical society, but all medical, paramedical and public health personnel are required to cope with the medical care and public health problems likely to be encountered during a national emergency. There should be local emergency health plans which are within the framework of the overall provincial emergency plan.

Conclusion

In this paper the development of emergency planning in general and its health aspects in particular, have been discussed. The division of responsibility has been indicated. Some aspects of the federal emergency health services program and provincial and municipal E.H.S. roles have been discussed. The futility of federal planning without the development of provincial and municipal E.H.S. has been indicated. It has been stated that E.H.S. should be an integral part of community health planning. The important role of the public health physician and the members of other public health disciplines has been briefly discussed.

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An Outbreak of Toxoplasmosis in Ranch Mink

T. J. PRIDHAM,[1] M.V.Sc., D.V.M.

PRESENTLY available evidence indicates that toxoplasmosis is prevalent in most parts of the world (1, 2). Surveys show that this infection is common both in domestic animals (3, 4, 5, 6) and in poultry (7, 8, 9). Serological studies suggest that toxoplasmosis may be an occupational disease of man (10, 11), and is associated not only with the ingestion of infected meat products but, more important, with the handling of infected animals or carcasses. The high percentage of positive blood titres obtained from populations that are normal and healthy (1, 5, 6) leaves the importance of this disease very much in question. The increasing frequence with which toxoplasmosis is being diagnosed as a primary disease entity in animals and man (12, 13, 14, 15) suggests a need for further study, especially with regard to the detection of natural reservoirs of infection.

Ranch-raised mink, while of minor agricultural importance, are raised in the temperate zone throughout the world. Toxoplasmosis has been reported in this species three times (4, 13, 16) but only one report describes serious losses. The apparent unimportance of this disease in mink may be a result of lack of study rather than absence of the disease. Persons who raise mink do not eat any of their products, but they do have intimate contact with their animals during the breeding, weaning and most important, the pelting seasons. If toxoplasmosis is wide-spread in mink its possible public health significance is at once apparent.

This report describes a serious outbreak of toxoplasmosis which occurred on a mink ranch in Ontario during 1960, and presents evidence that this disease has caused serious economic losses on a number of other ranches. Investigations into the origin of the infection also are described.

Case Report

The mink involved were maintained on a small ranch in Ontario. About 170 breeding female mink had been wintered and a normal breeding season was experienced in March. Most of these mink had been raised by the owner from his own stock. Fifteen females, however, had been obtained from a neighbouring ranch the previous November; no trouble was reported on the ranch of origin during 1959 or 1960. The diet was reported to be of conventional type, composed of poultry, turkey and beef by-products, ocean and lake fish, pork liver, a commercial concentrate at slightly lower than normal levels, and very small amounts of each of wheat-germ meal, brewer's yeast, and calf starter. The whelping season was considered by the owner to be progressing satisfactorily

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until May 18 when a number of new-born kits were found dead. Diagnostic assistance was not requested until May 25. A veterinarian was called on that day because a large number of adult females were not eating properly; none were completely off feed, however, and none had died. Examination of the ranch records showed that since May 12 neonatal deaths had occured in numbers greater than normally to be expected. The rancher did not realize that these losses signified serious trouble until May 18 when most of the kits born on that day were dead and most kits born thereafter were either dead or died within two days. On May 25 the attending veterinarian contacted the Fur-Bearing Animal Diseases Laboratory at the Ontario Veterinary College for advice on the problem. Carcasses were not submitted for laboratory examination. Since the weather was very damp and cold the losses were thought to be due possibly to pneumonia. Accordingly, a recommendation was made to add aureomycin to the feed for five days at a level of 200 grams per ton before the addition of water. It was advised also that the general husbandry on the ranch be investigated critically.

Nothing further was heard from the rancher until June 15 when he came to the Fur Bearing Animal Diseases Laboratory stating that over 300 kits had died and losses were continuing. He thought that food poisoning was involved and submitted a sample of suspected beef tripe for examination. Food poisoning was ruled out on the grounds that the majority of the losses occurred at a time when the kits were not eating solids and also the duration of the disease was much too long. Some freshly dead or ill kits were requested for examination and on June 18 a female and her litter of four kits were brought to the laboratory. The mother appeared to be in a normal state of health. All four kits were greatly stunted in size to about half normal, practically devoid of fur and the whole body was covered with a mange-like skin condition.

Losses of kits continued on the ranch until about July 1. Three hundred and eighty kits, representing 50% of the kit crop, were lost. Many of the survivors were stunted, developed their fur coat very slowly, and in some cases a grey discolouration of the fur was noted.

Ten more living affected kits were submitted for examination during the summer. Blood samples were taken from all kits brought to the laboratory and subjected to the Sabin-Feldman dye test for toxoplasmosis. Blood was drawn also from a number of adult females which had aborted or had lost all or part of their litters and from other females which raised normal litters.

Laboratory Examination

Careful examination of the affected litter submitted to the laboratory on June 18 failed to reveal any external parasites. Skin scrapings for mange mites were negative. One kit was killed and examined for ectoparasites by the digestion technique, also with negative results. Unfortunately, the carcass of this animal was not saved for a thorough post-mortem examination. The three litter mates were subjected to skin scrapings at intervals, always with negative results. They gradually improved in health and except for being slightly stunted they appeared completely recovered by July, when they were weaned. At this time the dam was killed and examined thoroughly but no pathological lesions were found.

On July 9 one of the kits died suddenly in a convulsion. Gross post-mortem

examination revealed congestion of the blood vessels of the meninges and brain but no other changes. No organisms of possible pathological significance were obtained by bacteriological culture. Histological examination revealed a non-suppurative encephalitis and a large number of cysts typical of *Toxoplasma gondii* in the brain. No free forms were demonstrated. Blood was taken from the remaining two kits, which were then killed for histological and cultural examination. Half of each brain was taken for histopathological examination; the other portions were used for mouse inoculation in attempts to isolate toxoplasma organisms.

Laboratory Results

The two surviving kits had toxoplasma dye test titres of 1:32,000 and 1:16,000 respectively. Non-suppurative encephalitis was seen in both animals when examined histologically and numerous toxoplasma cysts were present in the brains. Virulent toxoplasmas were demonstrated in the mice inoculated with portions of these brains. Toxoplasmosis was demonstrated in all ten of the other mink submitted for examination during the summer by serological, histological and mouse inoculation tests.

The blood samples drawn from the adult mink on the ranch showed blood titres ranging from negative to 1:8,000 in mink which had lost litters, while a few females with normal young had titres up to 1:1,024.

It was shown that the disease occurred in the mink purchased from the neighbouring ranch as well as in the home-raised stock.

Serologic Surveys

During the latter stages of the investigation into the above outbreak it became apparent that heavy kit losses, primarily at birth, had occurred on a number of other ranches in close proximity to Guelph, Ontario. A thorough study of the condition on each of eight ranches was conducted and the following general information was obtained. A number of abortions occurred during the latter third of pregnancy, and many other litters which appeared to have gone to term, were born dead. Other litters were born at term with part of the litters dead and some living but weak litters were born all or part of which died in 24–48 hours.

Dye tests carried out on the sera taken from mink on each ranch indicated that toxoplasmosis was involved in the disease on four of the ranches. In these cases, the dye-test titres in mink which had lost litters ranged from zero to 1:4,096 and a few mink which raised normal litters also had positive titres as high as 1:512. Careful questioning of the other ranchers reporting neonatal mortality of kits but in whose mink toxoplasma dye-test titres were not found revealed that few or no abortions occurred and that practically all litters were born at term. On these ranches higher-than-normal early loss of litters or portions of litters could not be explained.

Because the study on these ranches was carried out some time after the trouble had ended there was no opportunity for histologic study of the tissues of dead kits nor attempts to isolate organisms.

Source of the Infection

Through careful examination of the feeding and management practices on all of the ranches under study in attempting to find common factors which

might suggest the source of infection, it was learned that two of the ranches on which toxoplasmosis occurred had fed both fresh and frozen muskrats (*Ondatra zibethica*) obtained from local trappers during the trapping season in March and April of 1959 and 1960. One of these was the ranch initially studied, from which a strain of *Toxoplasma gondii* was obtained. Another rancher, who reported poor reproduction for two years had fed wild European hares (*Lepus europaeus*) obtained from local hunters throughout the winters of 1959 and 1960, as well as a few ground-hogs (*Marmota monax*) obtained during the intervening summer. Some of these were fed fresh and some were frozen. The fourth rancher, in whose mink serological evidence of toxoplasmosis was found, reported feeding frozen muskrats about four years previously but none since.

None of the ranchers in whose mink toxoplasmosis was not diagnosed had fed any form of wildlife at any time.

As a result of the above information, fresh muskrats were obtained in April 1961, from the trappers who had supplied carcasses to the mink ranchers in 1960. The brains of 15 muskrats were removed aseptically and half of each brain was fixed in formalin for histopathological study and the other half was used for mouse inoculation tests. Organisms indistinguishable from *Toxoplasma gondii* were recovered from mice inoculated with the brains of two muskrats in which typical cysts were demonstrated histologically.

The significance of fresh muskrat carcasses as a possible dietary source of toxoplasmosis in mink is apparent.

The pattern of occurrence of toxoplasmosis on the ranches studied, as evidenced by kit losses and dye-test titres in whelping females, suggested that the ration was the source of infection. The time that the infection was acquired on the ranch initially studied appeared to be sometime in the period between November and May, since the mink bought from a disease-free ranch in November were found to be infected in May. This coincides with the period when fresh muskrats were fed to the mink. There was no evidence of pen-to-pen transmission, of introduction of infection through the purchased breeding stock, nor of spread of infection by transfer of male mink from pen-to-pen during the breeding operation. The isolation of *Toxoplasma* from muskrats, trapped in the same areas from which animals fed to mink had been taken previously, further strengthens the hypothesis that infection was introduced in muskrat carcasses fed to mink on the affected ranches. This could not be proved, however, in the studies herein reported, since samples of the rations fed at the time the losses occurred were not examined for *Toxoplasma*.

Summary

An outbreak of toxoplasmosis in mink is described. The diagnosis of the disease was made by serologic (Sabin-Feldman dye-test) and histologic study and was confirmed by isolation of the organism in mice. Serologic evidence was obtained which suggested that toxoplasmosis was involved in heavy losses on three other ranches. The mortality was confined to kits and occurred primarily as abortions, the birth of dead kits at term and the occurrence of neonatal deaths. Losses were as high as 50% of the kit crop.

Attempts to trace the source of infection showed that three of the four affected ranches had fed either muskrats, or rabbits and ground hogs, both fresh

and frozen, during or just previous to the time when the losses occurred, and the fourth rancher had fed muskrats about four years previously. Organisms indistinguishable from *Toxoplasma gondii* were isolated from apparently healthy muskrats obtained in the same areas as were those fed to mink the previous years. The possibility is considered that muskrats were the source of *Toxoplasma* for the infected mink.

ACKNOWLEDGEMENTS

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COMMUNITY PLANNING FOR MENTAL HEALTH

Ill health defies analysis into physical, mental, and social components. Modern concepts of causation of recognizable mental disease force us to emphasize local community services. These should probably be planned as general all-purpose services at the "phase junction" between the public and its helping professions and be backed by more highly specialized ones. Every mental health service should be planned with the aim of keeping the patient in his ordinary social and family atmosphere, and he should be removed from it only when treatment of a more or less specific sort is needed, or when symptoms are severe and escape medical control.

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Paul V. Lemkau, M.D.

A Localized Outbreak of Tuberculosis

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IN the spring of 1958, a school van-driver was found to be an open case of tuberculosis. He was the owner-operator of a school van and had been regularly bringing 50 children to and from school each day.

The district where this outbreak occurred is completely rural. The pupils are transported from a large area by school vans. The school comprises Grades I to VIII, with the older children being conveyed to another school outside the district.

The incidence of tuberculosis in this area is extremely low. The standard of care provided by the Provincial Tuberculosis Treatment Service is high and there is effective case-finding and supervision provided by the local health authority. The findings have been influenced recently by the influx of immigrants from Europe, most of whom are Mantoux positive and a number have been found to be cases of active tuberculosis.

The driver of the van was removed to the sanatorium and the usual case-finding program was instituted.

Investigation and Findings

Family contacts were examined. The results of the Mantoux tests and X-rays of positive reactors are presented in Table I. All of the immediate family contacts of the original case were positive; four out of five were active cases. Ages of these cases ranged from 10 months to 6 years.

TABLE I—Mantoux Tests—Family and Other Contacts

Classification of Contact	Number	Number Positive Mantoux
Patient's own family	5	5
Patient's relatives	27*	12
Occupants of school bus	50	10
Workmates and social contacts	10	6
Rest of students in the school	147	6

*One Mantoux negative later admitted to Sanatorium with T.B. meningitis, active.

In the families of relatives who were visited by the van-driver and his family, 10 were found to be positive and 17 negative. Tests were repeated later on the negative reactors and two more were found positive. A member of one of the families, age three years, became ill two months later, and was diagnosed as tuberculous meningitis. The patient was admitted to the sanatorium. Two other children, age seven and three were also admitted.

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In addition to the family contacts, social and fellow-employee contacts were given Mantoux tests. Six were found to be Mantoux positive and four negative. One child, aged three years, living across the road from the original case, was admitted to sanatorium and released after seven months.

The pupils travelling in the van were Mantoux tested. Of the 50 tested, 10 were tuberculin positive. One girl (a cousin) age nine was admitted to the sanatorium as an active case and one was found to be an inactive case. In view of this, the rest of the students and staff at the school were Mantoux tested. Of 147 tested, there were six positive. There were no active or inactive cases. Three months later the tests were repeated and two others were found to be positive.

The mobile X-ray unit was brought into the district and a general survey made. Four hundred and twenty-seven X-rays were taken. No further active cases were found. The picture obtained for the rest of the local population of this area was essentially the same as that found in the remainder of the health unit area by the mobile unit in the spring of 1958. The highest percentage of positive reactors (100%) was in the driver's immediate family, followed by 60% among his workmates and social contacts, 44% among his relatives and 20% in the children using the van. The rest of the students in the school showed a percentage of about 4% positive, a little higher than that for the children at large throughout the district.

As a part of the tuberculosis control program, all Grades I and IX school children in the area are tuberculin tested each year. In 1958, out of 552 Grade I children tested, six were Mantoux positive, and out of 761 Grade IX children, 32 were positive.

A general survey of the rest of the neighbourhood by mass radiography showed no difference in incidence from the rest of the area of the health unit.

Discussion

This one open active case of pulmonary tuberculosis probably gave rise to the disease in the eight active cases admitted to the sanatorium. It would also seem reasonable to suppose that he infected a good proportion of those of his contacts found to be Mantoux positive, as the percentage positive is so much in excess of what would have been expected had the general incidence throughout the district applied. In the children using his van, 20% were positive as compared with just under 3% in the children throughout the entire area. While we have no valid samples indicating the percentage of Mantoux positive adults in the area, tuberculin testing of various groups, such as student nurses and general contacts of known tuberculosis cases, would indicate a very low figure, whereas, in this case, 60% of the work and social contacts investigated and 44% of his relatives were positive.

Where tuberculosis control is as intensive as it is in this area, the incidence of the disease can be expected to fall rapidly. The local health authority in this area has the means and facilities to conduct a complete investigation of all contacts, even remote ones, and good treatment service is provided by the provincial government. Adequate treatment can be expected to render a patient sputum-negative within a year.* Under these circumstances indigenous tuber-

*Springett, V. H. (1960) Pulmonary Tuberculosis, The Last Stages, J.R.S.H. 80/6/487.

culosis can be expected to become a rarity. In this area the Mantoux positive rate has already fallen to a low figure indicating a highly susceptible population. One factor, which could if common, affect this continuing decline, would be the emergence of drug resistant strains.

One of the authors while attending the International Tuberculosis Convention in Istanbul last year, was impressed by the rapid fall in the incidence of the disease in countries which were able to provide adequate and prompt isolation of sufferers in sanatoria. This small circumscribed epidemic may be the forerunner of many others when tuberculosis is introduced into a district by open cases coming in from outside.

The problem which appears to be presenting now is whether it will be more effective to maintain an intensive control system based on routinely Mantoux testing school children, and carrying on intense case finding and contact examining when cases do occur, or whether it will be more effective to vaccinate the whole population of the area with B.C.G.

Provided that the decline in incidence is continued it would seem that this latter would not be merited, but if these small outbreaks are repeated it may well be justified.

Summary

A small, circumscribed outbreak of tuberculosis, traceable to one open case is described. The results of Mantoux testing in the area are recorded. The question is raised of the choice between control by present methods, or by a generalized vaccination by B.C.G. of the whole population in the area.

RABIES

The third human death in the United States this year due to rabies was reported this week by Kentucky. The patient, a 74-year-old resident of Powell County, died on June 26. Approximately five weeks previously he had investigated a commotion in his chicken house and had found a fox under the shed. On attempting to chase the fox away, he was bitten on his left thumb. The fox was killed and discarded. The man refused rabies vaccination initially, but after two calves had died within the following two weeks of apparent rabies, he assented to vaccination. He received 14 doses of duck embryo vaccine, the last, three days before onset of symptoms. On June 22, he experienced tingling on his left side, followed subsequently by progressive paralysis, photophobia, hydrophobia and death. Post mortem examination revealed Negri bodies in brain material.

Source: Morbidity and Mortality Weekly Report, Public Health Service, v.s. Department of Health, Education and Welfare, ID (26): July 7, 1961.

Canadian Journal of Public Health

EMERGENCY PLANNING AND PUBLIC HEALTH

AS another in the series of international crises develops, on this occasion over the Berlin situation, all of us become more aware of the threat of nuclear war. Nor must we forget the possibility of the use of biological and chemical warfare agents. Modern war up to the last decade has been something that Canadians have been able to think of as an event that occurred thousands of miles away in another country. This happy situation no longer exists and Canada today finds herself between the two great and antagonistic nuclear powers. Canada could have nuclear weapons of great power exploded on her territory with ONLY a few minutes or hours of warning. Biological and chemical warfare agents could also be used. This threat is something which Canadians have to live with and for which preparations must be made if the maximum number of Canadians are to survive if the worst should occur. Every Canadian has a duty to know what to do for his own and his family's survival. The members of the public health disciplines such as public health physicians, veterinarians, dentists and nurses, sanitary engineers and sanitarians, public health educators and others have additional responsibilities.

Your Association has recognized the responsibilities of members of the public health professions by adopting a resolution on Emergency Planning at its annual meeting in Regina last June. In this issue there appears a paper on the health aspects of emergency planning. There is a great deal of discussion concerning the scope of public health and what should be included in public health programs. There is reluctance on the part of some to enlarge their programs and to include new subjects whilst others welcome opportunities to give leadership in new areas.

Emergency planning and emergency health services are new areas which challenge members of the public health disciplines. This planning and these services are now considered to be a function of government rather than the work of a separate organization. Federal health officials have to plan for the continuity of the health services which are essential during a national disaster such as would occur following a nuclear attack on this country. They are also

required to assist provinces, municipalities and others with their emergency health planning and the development of their emergency health services. Another federal responsibility is the co-ordination of provincial emergency health services.

Provincial health officials have to plan for the continuity of essential provincial health services during a national emergency and to inform their employees of their roles under such conditions. They should have a provincial emergency health services plan which fits in with the overall one of the Emergency Measures Organization and co-ordinates municipal emergency health plans.

At the municipal level medical officers of health and their staffs as government employees should take an active part in developing plans for local emergency health services. If action has not already been taken plans should be made to prevent disease and injury and maintain the health of the population as much as possible under the conditions that are likely to occur in the event of a national disaster following an attack on this country. If it has not already been done, employees of municipal health departments should be assigned a role in the event of disaster.

There are some who say that preparation for nuclear attack is futile because of the destructive power of modern weapons but there are others who contend that much can be done to mitigate the effects of nuclear attack. They are supported by the conclusions of authoritative studies. All of us hope that international disputes will be resolved by negotiation and that nuclear war will not occur, now or ever. If it should occur now, during the next year or at a later date, Canada would in all probability be involved either through the explosion of nuclear weapons on or over her territory or as a result of fallout from nuclear explosions in neighbouring countries. It would therefore seem urgent and prudent that the health services of Canada should be organized to meet this challenge. Members of the public health disciplines have training and experience and occupy positions which enable them to make important contributions to Canada's preparation for a national emergency.

PROVINCIAL MEETINGS

NOVA SCOTIA BRANCH

September 27 and 28, 1961

Isle Royale Hotel, Sydney, Nova Scotia

ONTARIO PUBLIC HEALTH ASSOCIATION

October 2, 3, 4, 1961

King Edward Sheraton Hotel
Toronto, Ontario

Abridged Article

DEFECTIVE DRAINAGE AND ALLIED PROBLEMS

R. A. COLLING,[1] C.S.I.(C)

DEFECTIVE drainage, leaking wastes, leaking water services and surface drainage are among the more common complaints lodged with a health department. The difficulties encountered in having these nuisances abated are many and varied.

Single House Drain

An obstruction in a single house drain, in the case of a modern, or fairly modern house, will almost invariably show up in a back-up of sewage through one or more cellar floor drains, and will occur first in the floor drain having the lowest level in relation to the floor itself.

Many older houses have no floor drains in the cellar, and in some cases have no cellar. A drain obstruction in these cases may show up, by a back-up of sewage through the breather, on the lawn, if any; through a fixture in the cellar such as a water closet, laundry tubs or not uncommonly, through defective joints in the house drain, especially at the footing of the soil stack, where settling of the house has broken the connection.

If it is established that only one house is involved, it is common practice, where tenant occupied, to give both owner and occupant 24 hours notice to have the obstruction removed and the debris cleared away.

Rulings by magistrates and judges vary as to the responsibility of occupant and landlord in the matter. For this reason in a tenant occupied dwelling, if an order is required both parties are given an order, and should the matter become a case for court, both may be summoned to appear in court, where it becomes the duty of the magistrate to determine responsibility. An exception to the normal procedure is made in the case of a rooming house. This Department has always held the operator of the premises, whether owner or tenant, responsible for the clearance of a drain obstruction.

Joint Drain — Two Houses

An obstructed joint drain serving two houses may show in several ways.

If the obstruction is ahead of the "Y" or point at which the two house drains combine, under normal circumstances there will be a back-up of sewage in both cellars. It is frequently found that the cellar floor in one of the houses, is on a slightly lower level than the other, in which case all the sewage from both houses, will back up on the lower cellar floor.

It is a simple matter to determine whether both houses are affected. First, flush a fixture in the house where the sewage is, checking at once to see the resultant back-up. Tell the persons in this house to run no water down the drains. Then go into the house with the dry cellar and flush fixtures in this house, preferably wasting a bath full of water. Go back to the cellar at once where the sewage has backed up and check to see if there is a back-up from the water wasted from the tub next door. If there is a back-up in the affected cellar when fixtures are flushed in each of the two houses, the obstruction is ahead of the "Y" and both parties are responsible. They should be given 24 hours notice to have the obstruction removed.

It is also possible and frequently happens, that the branch of the drain serving one of the two houses on a joint drain, may become obstructed, i.e. there may be an obstruction in the drain between the soil stack and the "Y" serving the two houses.

In this case there will be a back-up in the cellar of the affected house, from the fixtures in that house only, and water wasted from the fixtures in the other house will run away freely.

Again, where the house or houses are tenant-occupied, and a question of responsibility between landlord and tenant arises, 24-hour notices should be given to owner and occupant in each case.

Joint Drain — More Than Two Houses

There are many cases where three to a dozen or more houses are connected to one common outlet to the city sewerage system. Multiple connections of this sort are no longer permissible under modern by-laws.

There are many ways by which these houses may be hooked to the common outlet to the sewer. Most of the house drains are 4 inch and connect to a private 6 inch

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or 9 inch drain leading to the sewer, through one common outlet. The connection to the sewer may be at either end of a row of houses, it may be in the middle of the row, or with an uneven number of houses on each side of the connection.

Again, the common, private 6- or 9-inch drain may run through the back yards, with a common connection to a side street, or with a common connection to a sewer in a public lane, at the rear of the houses, or even under the houses themselves to the single connection to the sewer.

One of the major problems in cases where there are many houses on one outlet, is to determine where the connection to the sewer is located. Unfortunately, with these older installations, there are seldom any drain plans available for reference. Moreover, in many earlier installations no breathers were installed.

When the connection to the sewer is at one end of a row of houses and sewage is backing into the cellar or house at the connection end, it is reasonably safe to assume that the responsibility for having the drain cleared must be shared by all parties on the drain. The connection to the street is always made from the lowest point on the private drain. Theoretically, if the obstruction is not removed the sewage will back into each cellar successively from the lowest point as the volume increases.

When the connection to the sewer in a row of houses has been made from a point between the end houses the private drain will be graded from each end to a low point from which the connection is made. In a case of this sort it is possible for one side of the private drain to be obstructed and for the other side to be running freely. Normally, only those houses on the affected side are involved and the owners and/or occupants of these houses will be ordered to have the drain freed of obstruction.

It is also possible for the 4-inch house drain of one unit of a row of houses to be obstructed between the soil stack and the point where it enters the 6- or 9-inch common drain. In this case only the owner and/or occupant of the affected house is involved.

It is very difficult for one inspector to make an assessment of responsibility in the case of a drain obstruction where several houses are involved. It is the practice to have a senior inspector accompany, advise and assist, the district inspector with the investigation of the problem.

Apartments or Multiple Occupancy Premises

Where a drain is obstructed in an apartment house, a store premises with several apartments above, or a converted house with several housing units, the owner is always held responsible for the removal of the obstruction.

Duplex or triplex premises are an exception in the case of responsibility, the usual practice in these cases is to notify both tenants and landlord. In practice, however, it is not uncommon for the landlord to assume responsibility, upon receipt of a verbal order from the inspector.

Rain Water Drainage Through House Drains

Upon inspection of a so-called blocked drain, it is often found that the obstruction is only in the trap of a floor drain in the cellar, and the waste from the plumbing fixtures runs away freely.

Rain water drainage from roofs is carried through the down-pipes and rain-water branches of the house drain, to the house drain, through floor drain traps, the rain water providing the water seal to prevent sewer air from backing into the house. These traps often become obstructed by extraneous material carried into them by the storm water or by material from the cellar floor.

It is also not uncommon to find that the tile rain water leader below ground collapses or is split by frost, and in time of storm the rain water will seep into the cellar at a point more or less opposite the damaged tile. This requires replacement of the broken tile.

General Information

- Blocked drains should always be treated as an emergency and the responsible party or parties given verbal instructions to have the necessary work carried out immediately.
- When in doubt regarding a drainage problem, consult your senior inspector, who will give you assistance. If the problem involves more than one house it is good practice to check with the plumbing section of the Department of Buildings and Development to see if drain plans are available. There may be no plans or the plans may not be correct, since alterations may have been made in the system without notifying the plumbing section. In spite of what the plans may show, be sure of your findings by actual test.
- In the case of any dispute over responsibility contact should be made at once with a senior inspector, providing him with the full names and addresses of occupants and owners, so that the necessary orders may be prepared and arrangements made for prompt delivery.

Following are a few possible answers to the question "What shall I do to have the drain cleared?" (a) "If you feel that the obstruction is on the city side of the street line telephone the Department of Public Works and make the necessary deposit to have the drain opened by the city." (b) "If you feel that the obstruction is on the private side of the street line you must contact a private drain man and arrange to have the obstruction removed." (c) "If you are in doubt as to where the obstruction is located call a competent drain man and ask his advice."

Defective Drainage

Complaints are often received that sewage is seeping into the complainant's premises, from the neighbouring house, usually a semi-detached house or one of a row of houses.

This problem commonly occurs in older housing, where the joints in the drain are deteriorating or, the house has settled and the footing of the soil stack is damaged. Sometime it is possible to trace the trouble by wasting water through the fixtures in the house with the suspected defective drainage system. Generally speaking, however, it is good policy to prove the point conclusively by the use of a dye test (usually potassium permanganate) or by the use of fluorescein and a black light.

It must always be remembered that the trouble may be located in the complainant's own drainage system, and that possibility should be thoroughly investigated.

Where there is a question as to responsibility in a tenant-occupied house, verbal orders should be given to both occupant and owner, to be followed up by written orders, if there is any doubt that the work is not going to be done following verbal notice.

It is not uncommon when investigating a complaint of defective drainage to find that the drain is not defective and that the cause of the seepage is a leaking water service, or a seepage of ground water, especially, in the latter case, in the spring or following very heavy rain.

Plumbing Wastes

The Department frequently receives complaints that sink wastes or other waste lines are obstructed. Usually these complaints are from tenants, and in the case of private homes, or flats over stores, the tenant is held responsible. Some of these problems involve opening a wall, or ceiling or taking up a portion of a floor, in order to locate the source of the trouble. Where this is necessary the owner should be consulted, since many owners will not take kindly to the opening of walls, floors, etc., without their knowledge.

Where waste water from plumbing fixtures is seeping through ceilings or causing damage to property, the owner will frequently have repairs made promptly when it is pointed out that his property is being damaged.

In the case of obstructed waste lines in apartment houses, it is usual to order the owner to correct the condition, especially where fixtures in several apartments are affected. The reasoning is that common waste lines serve several apartments, and where two or more are affected the obstruction is in the common waste line. An exception to this may occur where a single fixture in an apartment is obstructed, such as a sink or wash basin, in which case the tenant is held responsible. Again, however, where a wall, a ceiling, or a floor must be opened, the landlord should be notified, because of the damage to his property.

Detergent Foaming in Apartment Drainage Systems

A relatively new problem, somewhat difficult to handle has arisen recently.

In high rise apartment buildings the excessive use of detergents by the occupants has created a serious problem in that the waste water containing the detergent is greatly agitated and aerated during its fall down the long waste lines in the building. This provides so heavy a foaming action, that the foaming waste backs up through the fixtures in the lower apartments.

A satisfactory solution to the problem is entirely the responsibility of the owner of the premises. Three possible approaches are:

Education of the housewives to reduce the use of detergents—a very difficult, if feasible, matter.

The use of backflow-prevention devices on the plumbing in the apartments affected.

In the construction of high rise apartment buildings a separate waste line connected to the drainage system, is being tried out, for the lower floors. Thus detergent laden waste water from the upper floors by-passes the lower floors and causes no problem, and the waste water in the separate lower floor waste lines has a very short fall, and does not foam to the extent that it causes trouble.

The Department can only suggest remedies to the owner and in the event that back-flow preventors are to be tried, the owner or responsible person may be told to contact the chief inspector in the plumbing section of the Department of Buildings and Development, for advice.

Leaking Water Services

The water service piping, from the water main in the street to the stop and waste defect and repair are concerned, in much the same manner as a drain.

When a defect or leak develops the Department of Public Works repairs on the city side of the street line, and it is the responsibility of the owner or tenant to make the needed repairs on the house side of the street line.

A leaking water service may show up in many ways. Water may seep very slowly through the cellar wall, at or near the point where the piping comes into the cellar, or even at times, following the line of least resistance, it may seep through some distance away from the point of entry of the piping.

Again in the case of a bad leak, the water may pour into the cellar through openings in the wall, or well up through defects in the cellar floor.

It may also well up through the lawn, again taking the line of least resistance, or in the case of semi-detached or row housing, it may seep into an adjoining house.

Normally it is possible to ascertain that there is a leak by putting an ear against a cold water tap or exposed water pipe. A hum indicates that water is escaping somewhere. If all taps are shut tight and there is no water escaping through a defective water closet, it is reasonably safe to assume that there is a leak.

The responsible party (owner or occupant or both), should be given verbal notice to have the needed repairs made at once and the same advice, as in drains, given them, i.e., if they feel that the leak is on the city side of the street line, a deposit is paid to the Department of Public Works. If the defect appears to be on private property, a plumber should be called.

In any event, if action is not forthcoming with verbal notice the necessary written order or orders should be requested.

There are times when it is very difficult to determine if there is a leak on a particular water service because of other factors such as two or more services leaving the water main in close proximity, or a leak in the water main itself, the water in this case follows along the piping and enters the cellar.

Where a difficult problem arises the senior inspector should be called and where necessary the Operations Section of the Department of Public Works should be requested to make an investigation.

Storm Water

Complaints are sometimes received that storm water as a result of rain or melting snow and ice is running off neighbouring property to the complainant's premises and is seeping into the cellar, damaging the walls, etc. This run-off may be the result of the natural slope of the land, because of defective eaves or down-pipes, or because of some raising of the yard level. This must be looked upon as property damage and is not a matter for the Department of Public Health, but is rather a matter between the two parties concerned which may be solved by amicable arrangement or if necessary by civil action. Complainants should be so advised if such a problem arises.

Flash Flooding

Following a very heavy and prolonged rain, sewage and storm water combined will sometimes back into cellars along a whole street or part of a street. This is caused by overloading of the sewer in the street (combined storm and sanitary sewers).

These sewers are usually ones that have been laid for many years, and at the time of construction were adequate for the properties to be served. However, increasing density of housing has augmented the flow of storm water to the point where the pressure in the sewer forces sewage through the private drains into the cellars.

Persons who complain of this condition should be advised that the sewage usually drains away when the rain ceases. If, however, it does not drain away it is advisable to call a private drain man, who in all probability can clear the drain by plunging or by means of a rod or snake.

The cellar should then be flushed down and a good disinfectant and deodorant should be used liberally. Chloride of lime or javel water is suitable. Foods contaminated by sewage are not fit to use and should be destroyed.

In some instances the installation of a back-water valve on the house drain will be useful. If, however, the roof-drainage is connected to the house drain the use of a back-water valve will result in the cellar flooding with storm water from the roof, because the greater pressure from the sewer in the street will hold the back-water valve closed. A simple diversion device can be attached to the down-pipes which will divert the flow of storm water from the rain water branches in time of heavy rain and spill it into the yard. The cost to the taxpayer of installing separate storm and sanitary sewers to overcome this condition would be almost prohibitive. Fortunately, however, instances of flash flooding are not common.

ANNUAL REPORT OF THE ASSOCIATION

1960–61

PART IV

REPORT OF THE COMMITTEE ON THE CHARTER AND BY-LAWS

K. C. Charron, M.D., Chairman

THE CHARTER was amended by Bill S9 which, having passed the Senate and House of Commons, was given Royal Assent on March 31, 1960. Work on a revision of the by-laws began even before this memorable date. A preliminary draft of the by-laws was submitted to the Executive Council in Halifax requesting guidance as to further procedure.

It was decided that the draft should be sent to all members of the Executive Council, and it is to be noted that this included the official representatives of each provincial association, branch or division. This was done very shortly following the meeting of the Executive Council. Over the summer months about twenty-five replies were received, including comment from the corresponding members of the committee. The nucleus committee then met on two occasions and was able to incorporate most of the important points raised in a final draft of the by-laws which was distributed to all Executive Council members early in the year. It is this draft which will form the basis for discussion by the Executive Council in Regina.

REPORT OF THE LABORATORY SECTION

F. O. Wishart, M.D., D.P.H., Secretary

THE TWENTY-EIGHTH Annual Meeting of the Laboratory Section was held in Ottawa on December 1 and 2, 1960. The vitality of the Section was indicated by a near record registration of 142, by an attendance of some 95 at the annual luncheon and by a program of 28 excellent papers extending over the two full days. Of special interest was a report of a new salmonella serotype which has been named Salmonella canada.

The luncheon meeting was addressed by Dr. E. W. R. Steacie, National Research Council of Canada. Dr. Steacie's subject, "Science and International Affairs" proved a stimulating account of his observations of and reflections on Soviet science.

The Section was pleased to have present the Deputy Minister of National Health and Welfare, Dr. G. D. W. Cameron and to hear greetings from him.

A brief business session was held during which Dr. E. J. Young, newly-appointed Executive Director of the Canadian Public Health Association was introduced to the Section by Dr. G. W. O. Moss. Dr. Young gave a brief address, outlining the proposed activities of his office.

An Executive Council meeting was held on December 2 for discussion of Section affairs in general. A recommendation was made that in future, facilities be provided at the registration desk for collection of annual dues. Suggestions for subjects for a laboratory program for the Regina meeting were also made.

The Nominations Committee presented the following slate of officers for 1961:

Past Chairman — Sorin Sonea
Chairman — E. T. Bynoe
Vice Chairman — R. W. Reed
Secretary — F. O. Wishart
Council—A. E. Allin, Fort William, Ontario
J. M. Desranleau, Montreal, P.Q.
Leo Gauvreau, Quebec City
Hugh Robertson, Regina, Sask.
J. W. Stevenson, Montreal, P.Q.

The members of the Section expressed unanimous approval of this slate.

The next annual meeting will be held in Toronto at the King Edward-Sheraton Hotel on December 4 and 5, 1961.

REPORT OF THE COMMITTEE ON MEMBERSHIP

L. A. Clarke, M.D., D.P.H., Chairman

DURING 1960 membership in the Association increased by 276 from 1,673 to 1,949. With the exception of Newfoundland and the Yukon, a conjoint membership in a provincial branch or affiliated association and the Canadian Public Health Association continued to be available by paying one fee to the appropriate provincial association. Distribution of membership by provinces for 1960 and 1959 was as follows, with the 1959 memberships shown in brackets: British Columbia 193 (188), Alberta 229 (201), Saskatchewan 216 (204), Manitoba 95 (78), Ontario 595 (560), Quebec 273 (132), Prince Edward Island 51 (54), New Brunswick 126 (140), Nova Scotia 169 (116), Newfoundland 1 (0) and the Yukon and Northwest Territories 1 (0). It will be seen that with two exceptions, memberships increased in all the provinces.

Whilst this small increase in membership is encouraging, there remains a large number of public health workers who are not members of the Association and whose support is needed, if the Association is to acquire its proper stature and be able to speak for members of the public health profession across Canada.

During the year, the Chairman of the Committee wrote to corresponding members of the Committee enlisting their support in a membership drive. Several meetings of a central nucleus committee were held at which ways and means of increasing national membership were discussed. One subject discussed was membership for members of the Canadian Forces Medical Service. It was agreed that the chairman should recommend to Council that members of the C.F.M.S. be offered membership in the C.P.H.A. without membership in a provincial association if they so desire. Another matter discussed was continuing membership for retired public health workers without payment of fees. It was agreed that the Executive Director should write to provincial associations asking their views on this matter. It was suggested that in order to qualify, retired members would have to be in good standing, be at least 65 years of age and have been employed in public health for at least ten years prior to retirement. At the time of writing the report, replies from provincial associations were incomplete but the majority had answered and agreed in general to the suggestion. Some felt that ten years was too short a qualification period.

A leaflet entitled "One Membership" was prepared and distributed to assist with the membership drive. Requests were made in the Journal for members to continue their support and to assist in obtaining new members.

It is considered that there is a continuing need for this committee. While the provincial associations, because of their direct contact with members and their familiarity with public health practice and conditions in the provinces must continue to have the main responsibility for retaining present members and finding new applicants for one membership in the appropriate provincial association and the C.P.H.A., there continues to be a requirement for a national committee to assist provincial associations in their membership drives. However because of the differences in the provincial organizations it does not appear practical to have an individual membership drive carried on by a central committee.

During the past year efforts of the committee have been mainly directed towards ordinary membership. It is felt that in addition to this work, the Committee should study other types of membership such as Associate membership, and the desirability and feasibility of instituting a Fellowship in the Association.

REPORT OF THE COMMITTEE ON SUSTAINING MEMBERSHIP

R. B. Sutherland, M.D., D.P.H., D.I.H., Chairman

LAST YEAR it was reported that in 1959 for the first time certain leading companies and institutions had expressed their interest in and support of the Association's program of national health promotion by accepting an invitation to become sustaining members. In addition, one company made a grant to the Association of an amount equal to the fee for sustaining membership.

Towards the end of 1960 the sustaining members were invited to renew their membership and it is a pleasure to report that the following companies have continued their support: Canadian Industries Limited, Goodyear Tire and Rubber Company of Canada, Hudson's Bay Company and the International Nickel Company of Canada. In addition, the T. Eaton Company continued its support by making a second grant to the Association.

Early in 1961 sustaining membership was offered to fourteen business organizations for the first time. Four banks, namely, the Bank of Montreal, the Royal Bank of Canada, the Toronto-Dominion Bank, and the Bank of Nova Scotia became sustaining members.

To these companies which have generously provided their support, the Canadian Public Health Association expresses its appreciation and tenders its thanks.

Plans have been made to present the work of the Association progressively to as many suitable companies and institutions as possible and to invite them to become sustaining members. It is felt that a suitable certificate should be given to sustaining members and this matter is under consideration. It is also planned that sustaining members in addition to their monthly copy of the Journal, will be sent a copy of the annual report of the Association and be advised of any outstanding developments in the work of the Association.

REPORT OF THE COMMITTEE ON PROFESSIONAL EDUCATION

W. Harding le Riche, M.D., M.P.H., Chairman

DURING THE YEAR, Dr. J. M. Mather, professor of preventive medicine, University of British Columbia, resigned from the chairmanship of the committee, on assuming additional responsibilities as assistant dean of the Faculty of Medicine, University of British Columbia. Dr. W. Harding le Riche, professor of public health, School of Hygiene, University of Toronto, accepted the appointment of chairman.

The report, 1959–60, by Dr. Mather on the education of sanitary inspectors is sound. It proposed that the "Requirement for Study" should be prepared by a joint committee of the Canadian Public Health Association and the Canadian Institute of Sanitary Inspectors.

The Association's Committee on the Certification of Sanitary Inspectors under the chairmanship of Dr. A. E. Berry includes representatives from the Canadian Institute of Sanitary Inspectors and would be an appropriate committee to undertake a "Requirement for Study" for sanitary inspectors.

The survey on the work of Health Units in Canada, and the survey on the Education of Medical Officers of Health, being carried out by the School of

Hygiene under a Kellogg Foundation Research Grant, with the Division of Epidemiology, Department of National Health and Welfare, will give a great deal of factual information which will be useful in planning curricular changes. A similar study is being carried out by the University of Montreal.

Policies of the Committee on Professional Education have as yet not been settled, but it would appear that the education of physicians and nurses should be studied. The need, or otherwise, for health teachers in health departments should be re-examined.

REPORT OF THE COMMITTEE ON PUBLIC HEALTH PRACTICE

G. E. Wride, M.D., D.P.H., Chairman

THE COMMITTEE met during the fall of 1960 and the spring of 1961 in Ottawa, during meetings of the Dominion Council of Health, and disscused certain developments which will affect public health practice in Canada:

The appointment of Colonel E. J. Young as Executive Director of the Canadian Public Health Association with assistance provided at the request of the provinces through the Health Grants.

Dr. Young is currently visiting the provinces to stimulate studies and research in appropriate health fields and it is hoped that many of these will be submitted by the provinces for possible assistance under the Grants.

The completion of the survey on health unit services by Dr. W. Harding le Riche of the School of Hygiene, Toronto, with the assistance of Dr. E. W. R. Best of the Department of National Health and Welfare. It is expected that the report will be available at the time of the June meeting of the Canadian Public Health Association.

The completed extension of Dominion-Provincial Agreements under the federal Hospital Insurance and Diagnostic Services Act to all provinces, including the Yukon and the Northwest Territories at the beginning of 1961.

While the apparent separation of the administration of hospital insurance from the administration of public health continues in some provinces, the two previous administrations have been amalgamated recently under the provincial Department of Health in New Brunswick.

The probable introduction of medical care insurance in at least one province by 1962 will raise further problems in the co-ordination and integration of a possible new health insurance administration with appropriate provincial public health practice.

Association News

New Brunswick-Prince Edward Island Branch

The Annual Meeting of the New Brunswick-Prince Edward Island Branch, Canadian Public Health Association was held at the Charlottetown Hotel, Charlottetown, P.E.I., May 31–June 2.

Miss Muriel E. Hunter, R.N., Director of Public Health Nursing, New Brunswick Department of Health, was elected president. Other officers are: Immediate Past President, Dr. B. J. O'Meara, Director, Division of Dental Public Health for Prince Edward Island; 1st vice-president, Mr. Aldore LeBlanc of Moncton, Senior Sanitary Inspector for Westmorland County; 2nd vice-president, Dr. B. D. Howatt of Charlottetown, Assistant Deputy Minister, P.E.I. Department of Health; secretary-treasurer, Mr. Stanley Matheson, Supervisor, Psychiatric Social Workers, N.B. Mental Health Division; additional executive members, Miss Ruth Ross of Charlottetown, Prince Edward Island Public Health Nursing Service, and A. Emerson Wilby, Fredericton, Registrar General, N.B. Department of Health.

Dr. Charles Gass, Tatamagouche, N.S. was presented an honorary membership in the N.B.-P.E.I. Branch by the president, Dr. O'Meara, at the annual dinner. The award was proposed by Dr. R. D. Landry of Moncton, D.M.H.O. for Albert-Westmorland-Kent, Northumberland Counties.

Manitoba Public Health Association

Manitoba was well represented at the annual meeting of the Canadian Public Health Association in Regina, June 6–8. Thirty-two members were present from Manitoba including Dr. M. R. Elliott, Deputy Minister, Miss Jessie Williamson, Director of Nursing, and Mr. J. Courteau, President of the Manitoba Public Health Association.

Institute on Community Education

Proceedings of the Institute on Community Education for Health held at the University of Saskatchewan just prior to the 1961 annual meeting of the Canadian Public Health Association will be published this autumn. These will include papers given by Dr. George Rosen, professor of health education, Columbia University; Dr. J. W. Macleod, Dean of Medicine, University of Saskatchewan; and addresses given by several other participants in the institute. In addition, the proceedings will include data derived from the pre- and post-evaluation questionnaires concerning a definition of health education, a working model for health education programs, and a list of difficulties cited by health workers in the field as well as the techniques which have been found useful in coping with them. A set of recommendations will be appended to the proceedings.

Readers desiring a copy of the proceedings should communicate at an early date with Dr. R. F. Badgley, University of Saskatchewan, Saskatoon, Saskatchewan, so that a sufficient quantity of the proceedings may be printed.

News Notes

National

School of Hygiene, University of Toronto

A breakfast meeting of the School of Hygiene, University of Toronto Alumni was held in the Hotel Saskatchewan, on Wednesday, June 7, 1961. There were fifty-eight who sat down to breakfast together. They included the following: Drs. M. S. Acker; K. Adler, G. F. Amyot; R. D. Barron, A. M. Breuls, M. H. Brown; W. G. Brown, E. W. R. Best; C. L. Chou, J. J. Collins, R. A. Connor, L. A. Clarke, A. E. Chegwin, D. Clarke; M. Dantow, M. R. Elliott, M. Fitch; W. H. Frost; J. L. Gayton, C. F. W. Hames, J. E. F. Hastings; J. Howie, A. V. Hall; W. E. Henry; A. C. Irwin; F. F. Jackson; G. D. M. Kettyls; A. A. Larsen, C. R. Lenk; G. E. Large; W. H. le Riche; V. L. Matthews; G. K. Martin; G. W. O. Moss; J. B. Morison; F. C. Middleton, C. J. G. Mackenzie; D. M. McLean; H. E. Newman, A. J. E. O'Neil; N. J. A. Percy; V. K. Rideout; A. J. Rhodes; F. B. Roth; C. E. Robinson;

M. R. Warren, J. F. Webb; G. R. Walton; R. J. Wilson; W. F. Wright; W. J. Wood; E. J. Young; Miss M. Cahoon; R. H. Goodacre, Mrs. A. J. Rhodes; J. G. Schaeffer; W. Walkinshaw.

Dr. Walton, the President called on Dr. A. J. Rhodes, Director of the School to report on the School activities. The following were elected as Executive for 1961–1962: President, Dr. M. H. Brown; Vice-President, Dr. Jean F. Webb; Secretary, Dr. D. L. MacLean.

Federal

The Glassco Royal Commission on Government Organization recently appointed includes among its projects two of medical interest—scientific research and development, and medical services and hospitals. Dr. John Bilton has been named director of the scientific research and development project and Dr. John McCreary has been appointed director of the medical services and hospitals project with Dr. Albert Guildbeault, Montreal, as associate director. Others associated with Dr. McCreary are Dr. G. R. F. Elliott, Assistant Deputy Health Officer of British Columbia, Dr. R. C. Dixon, Dalhousie University, Dr. L. P. Mousseau, Edmonton, Mr. W. W. B. Dick, Moncton, and Mr. John Law, Toronto.

Dr. K. C. Charron, Director of Health Services, Department of National Health and Welfare, Ottawa, left Canada on August 18 for the United Kingdom and Europe, where he will undertake a broad appraisal of health services in a number of countries, including Great Britain, the Scandinavian countries, West Germany and France. Earlier in the year, Dr. Charron visited New Zealand and Australia for the purpose of carrying out an extensive study of the health programs in that area of the world.

Dr. Morgan Martin, Chief of the Mental Health Division of the Department of National Health and Welfare, has accepted an invitation to serve as a member of the World Health Organization's Expert Committee on Mental Health. The Committee, which will meet in Geneva, Switzerland, during the first week of November, will consider the role of public health officers and general practitioners in mental health care.

The eight members of the Committee were chosen to represent the north and south portions of both hemispheres. The members, all psychiatrists, have been invited to submit working papers on the topic to be considered and this material will be circulated prior to the meeting for later discussion by the Expert Committee. The Committee's findings will be published following the meeting. In preparation, Dr. Martin has been interviewing a number of general practitioners and Canadian public health authorities.

British Columbia

The British Columbia Government, by Order-in-Council, has placed the entire Columbia Basin in this Province under authority of the Pollution Control Board. This has resulted in a considerable increase in the workload of the Public Health Engineering Division of the Provincial Health Branch, which acts in a technical advisory capacity to the Board.

The five health units of the City of Vancouver will soon be served by a central supply room for the cleaning, packaging and autoclaving of needles, syringes and other equipment. The number of injections given by these health units in their immunization, skin testing and streptomycin therapy programs is about 156,000 annually, and it is anticipated that centralization of preparation and sterilization of equipment will result in greater efficiency and safety.

Staff Changes

Dr. J. L. M. Whitbread, Director of Occupational Health in the Provincial Health Branch, has been appointed Senior Medical Officer of the newly formed Greater Victoria Metropolitan Health Board.

Dr. Richard C. Swan has been appointed Assistant Director of the Central Vancouver Island Health Unit.

Dr. James McAnulty, a graduate of Edinburgh University, has been appointed Assistant Director of the Boundary Health Unit at Cloverdale.

Mr. Charles A. Goldie has been appointed public health engineer with the Division of Public Health Engineering in Victoria.

Mr. Murray W. Lewis, C.S.I.(C) of Oromocto, New Brunswick, has been appointed sanitary inspector with the Central Vancouver Island Health Unit at Port Alberni.

Mr. H. G. Henderson-Watts, C.S.I.(C), senior sanitary inspector with the Saanich and South Vancouver Island Health Unit, has retired after 35 years in public health service. Mr. Watts began his career in 1926 as a laboratory technician at Kelowna. His place at Saanich has been assumed by Mr. L. Benham, C.S.I.(C) of Vernon.

Miss Helene Boehme has returned to British Columbia from the University of

Toronto, after completing the course in public health nursing supervision and administration. She has been appointed public health nursing supervisor of the Peace River Health Unit at Dawson Creek.

Miss Lavinia Crane has been appointed public health nursing consultant, specializing in rehabilitation and home nursing, and is stationed at the Provincial Health Branch central office in Victoria. She recently returned from the University of Michigan after completing the M.P.H. course there.

Saskatchewan

Dr. Carlos H. Canitrot of the Argentina Department of Public Health, who is engaged in studies at the School of Public Health at the University of California in Berkeley, spent a few days in Saskatchewan with the Department of Public Health. His chief interest of study was the regionalization of health services in this province.

A plastic-covered marriage certificate which will fit into a wallet is now available from the Saskatchewan Department of Public Health for those who were married in Saskatchewan. The certificate is similar to the birth certificate issued in this province since 1949.

Jane G. MacKay, B.Sc.N., M.A., has been appointed a public health nursing consultant in the Division of Public Health Nursing, Saskatchewan Department of Public Health.

The Annual Review, the yearly report of the activities of the Humboldt-Wadena Health Region was recently published by the Naicam Surveyor. Material for the publication was supplied by the regional staff headed by Dr. Elizabeth Nelson, medical health officer; Peter Swallow, senior sanitary officer; and Orpha Yonge, regional nursing supervisor. The staff was assisted by Merle Kirk, health educator from the provincial department of public health.

Printed in newspaper format, complete with interesting photos and cartoons, the Annual Review offers a refreshing and interesting contrast to the usual type of annual report. The subject matter covers the whole complex of public health activities in an easy conversational style.

Municipal councils in the health region thought so highly of the Annual Review that they paid the postage to send it to every household.

Perhaps the most interesting aspect of the production of the Annual Review was the high degree of teamwork among public health nurses, sanitary officers, the medical health officer, the regional board, municipal councils, and the editor of the Naicam Surveyor, Mr. Robert Greenwood.

The July 15 issue of the *Health Newsletter* of the Saskatchewan Department of Public Health features accident prevention and mental retardation.

It reports that the Canadian Home and School and Parent-Teachers Federation at its annual convention in Montreal, June 4, called upon the federal authorities for help and leadership, and asked them to encourage the establishment of a national safety organization with a comprehensive program directed toward prevention of all kinds of accidents, not just those occurring on streets and highways. It also includes items concerning prevention of accidents on farms and urging the use of seat belts in automobiles.

Under the heading *Next Steps for Mentally Retarded Persons* is an article concerning activity in Saskatchewan in meeting this problem and announcing the opening of the new Prince Albert School which provides sheltered workshop activities for the mentally retarded who are able to do useful work in a suitable environment.

Manitoba

Mrs. Marie Salway, health educator with the Neepawa Health Unit, spent the month of July in Winnipeg conducting the School Health Education Workshop which was attended by 34 teachers.

Mr. Eli Weisstub is working with the Bureau of Food Control doing a special milk survey.

Staff Changes

Dr. W. C. King, Dental Services, left for Toronto at the end of July, to take his course in Public Health.

Dr. J. Battershill, former medical director at the Portage la Prairie Health Unit, has left the service, and is now on the staff of the Deer Lodge Military Hospital in Winnipeg.

Recently retired as Commanding Dental Officer (Quebec Command), Dr. Thos. Marsh arrived from Montreal at the end of July, to join the staff of the Bureau of Dental Services. Dr. Marsh will have dual responsibilities, lecturing in Public Health in the Faculty of Dentistry, University of Manitoba and serving as Regional Dental Director of the Health Units in the Greater Winnipeg Area.

Quebec

Montreal Health Bulletin

The spring issue of the Health Bulletin of the Montreal Department of Health

features an interesting report of the subcommittee appointed to study the question of the distribution and sale of barbiturates (goof balls) in the City of Montreal. The subcommittee met under the chairmanship of the Mayor of Montreal, His Worship, Mayor Jean Drapeau. Members included the Director and Assistant Director of the Department of Health, Dr. Adélard Groulx and Dr. Roland Lamquin.

The report describes the bad effects of goof balls, the usual ingredients of which are barbiturates and to a lesser degree amphetamines and tranquilizers. The improper use of these drugs causes serious and widespread health problems. The report deals particularly with the Greater Montreal area.

The report makes recommendations regarding the control of these drugs. Recent federal legislation should be of assistance in correcting the misuse of the drugs used in goof balls.

New Brunswick

The appointment of Dr. C. H. Turner of Fredericton as medical director of the Polio Clinic and Health Centre, Fredericton, effective July 15, was announced by the Health Minister, Dr. Georges L. Dumont. Dr. Turner, who has been in private medical practice in Fredericton since 1941, succeeds Dr. A. S. Cowie who resigned as the Clinic's medical director.

Deep appreciation for more than 39 years of "exemplary public service" was expressed by provincial health authorities to Dr. L. D. Densmore of Bathurst, who tendered his resignation from the Gloucester County Sub-District Board of Health, effective July 1. Health Minister Dr. Georges L. Dumont and the Chief Medical Officer, Dr. J. A. Melanson, joined in paying tribute to Dr. Densmore whose appointment as government representative on the Board of Health was dated May 3, 1922. Insofar as can be ascertained, this record has not been matched by anyone affiliated with boards of health in this province.

Nova Scotia

Miss Lois Robertson completed the advanced course in Public Health Nursing and Administration at the University of Toronto in May. She has been a relieving supervisor in the Cape Breton South Health Unit for the past month. Miss Robertson has become Supervisor of Nurses for the Atlantic Health Unit replacing Miss Mary Marshall who has resigned to be married.

Books and Reports

FUNDAMENTALS OF NUTRITION. *E. W. Crampton and L. E. Lloyd. Drawings by Evan L. Gillespie. W. H. Freeman and Company, San Francisco and London. 1960, 494, $7.50. 46 illustrations, 73 tables and 28 charts.*

This is one of a series of four books in animal science edited by G. W. Salisbury and Dr. E. W. Crampton. Dr. Crampton is professor of nutrition, Macdonald College of McGill University, Quebec, and is well known in Canada for his studies in nutrition. This book is intended for students. The object has been to introduce the basic facts concerning the nature of nutrients and of their metabolism, thus establishing a basis for reasoning in the selection of foods and in the compounding of diets and rations adequate for the nourishment of man and animals under specified conditions. The illustrations and charts are of special interest reflecting the experience of Dr. Crampton as a teacher.

FIRST CANADIAN SYMPOSIUM ON NON-GONOCOCCAL URETHRITIS AND HUMAN TRICHOMONIASIS. *Edited by Zoltan Gallai and Lucien Sylvestre. S. Karger, New York. 1960, 436 pp.*

The Symposium was participated in by clinical specialists from many countries. Dr. Pierre Durel, President of the International Group for the Study of Human Trichomoniasis, presided. Forty-four papers are presented in this volume the publication of which was made possible through grants from the Ministry of Health, Quebec and Poulenc Limitée.

INTRODUCTION TO HEALTH STATISTICS. *Satya Swaroop, M.A., Ph.D., M.P.H., F.N.I. E. & S. Livingstone, Ltd., Edinburgh and London. 1960, 343 pp.*

Dr. Swaroop is chief statistician, Health Statistical Methodology, World Health Organization, Geneva. He has been asso-

ciated with recording and measuring health for over a quarter of a century. This book is written for all health workers and concerns the information that they should collect, from whom to collect, how to collect, and lastly, how to use it to fulfil local, state, national and international needs. The book describes how, in accordance with well tested procedures, the foundations of an efficient health statistics system are laid, how this system is administered in a health agency and by what simple techniques the information is interpreted for the promotion of public health. The author has succeeded in presenting this knowledge in a practical and readable form and it is a valuable manual of reference.

THE CHEMICAL BASIS OF CLINICAL PSYCHIATRY. *A. Hoffer, M.D. and Humphry Osmond, M.D. Ryerson Press, Toronto. 1960, 277 pp., $9.25.*

The historical development of scientific thinking, approaches and methods of investigation in this field are briefly outlined and the results so far obtained are critically evaluated. Dr. Hoffer is a member of the Department of Psychiatric Research of the University of Saskatchewan, Saskatoon, and Dr. Osmond is Clinical Superintendent and Director of Psychiatric Research, Weyburn, Sask. Their work in Canada in schizophrenia commenced in 1950. They experimented with adrenochrome and adrenolutin, two derivatives of adrenalin and developed methods to demonstrate the presence of these compounds in the blood of schizophrenic patients. Their studies have attracted world-wide attention. From this rich experience the authors discuss the chemical basis of clinical psychiatry.

EARLY IDENTIFICATION OF EMOTIONALLY HANDICAPPED CHILDREN IN SCHOOLS. *Eli M. Bower. Ryerson Press, Toronto. 1960, 120 pp., $6.00.*

This book is written primarily for teachers, school administrators, and school trustees about what schools can do to increase to some degree the emotional strengths of children. Dr. Bower presents the findings of six years of study of over 40,000 children and offers a plan of economical, effective screening which teachers can employ. Suggestions for trying out the class procedures are described in detail.

ECONOMIC AND FINANCIAL ASPECTS OF SOCIAL SECURITY. *An International Survey. J. Henry Richardson. University of Toronto Press. 1960, 270 pp., $4.50.*

The author, J. Henry Richardson, Professor of Industrial Relations, University of Leeds, wrote this volume following a year's stay at the University of Toronto as a Cassidy Research Visiting Professor with the School of Social Work.

When a social security policy is under consideration in any country many questions are inevitably raised. Prof. Richardson defines the scope of social security, its basic principles and policies. The significance of social insurance is discussed and the relative merits of accumulating funds or using the "pay-as-you-go" method of financing. Chapters are included on old age and retirement, family allowances, and medical care. A further chapter deals with social security contingencies including unemployment, industrial accidents, disability and the death of the breadwinner.

This is an excellent presentation and will be appreciated by all engaged in public health administration as well as by social workers.

HUMAN PSYCHOLOGICAL DEVELOPMENT. *Elizabeth Lee Vincent and Phyllis C. Martin. Ronald Press Company, New York 10, N.Y. 1961, 522 pp., $6.50.*

In the preface the authors have stated that they intend to "guide, enlighten and reassure the student" and they hope "that he will 'feel' as well as 'think' psychological development". They have achieved this purpose. *Human Psychological Development* has been written for the layman in an easily understandable style. It is fluent, colourful and succeeds in touching upon a large subject without becoming highly technical at any time.

Considerable space has been devoted to early childhood and adolescence where the authors touch upon the essentials of genetics, embryology, and acquaint the reader with the Gesell developmental principles.

It is a book which we can highly recommend to young adults who did not have previous training in psychology, but who wish to get acquainted with basic principles in an enlightened, enjoyable way.

The authors deal with the role of the physical and biological environment and hereditary factors in moulding an individual's development. They introduce basic anatomical, physiological and psychological terms with simplicity and clarity. The text is well documented with up-to-date reference material and a well-chosen list of film supplements further contributes to render this book an excellent educational tool.